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**R645-301-500. ENGINEERING.****510. INTRODUCTION.**

The Engineering section of the MRP is divided into the operation plan, reclamation plan, design criteria, and performance standards. All of the activities associated with the mining and reclamation operations are designed, located, constructed, maintained, and those considered reclaimed are in accordance with the operation and reclamation plan. All of the design criteria associated with the operation and reclamation plan have been met.

**511. GENERAL REQUIREMENTS.****511.100. THROUGH 511.300.**

The combined operation and reclamation permit packages includes descriptions of the mining and reclamation operations with attendant maps, plans, and cross sections and its potential impacts to the environment as well as methods and calculations utilized to achieve compliance with design criteria and reclamation.

**512. CERTIFICATIONS.****512.100. MAPS AND CROSS SECTIONS.**

All maps and cross sections specified under 512.100 through 512.150 are prepared by, or under the direction of, and certified by a qualified, registered, professional engineer or land surveyor, with assistance from professionals of related fields. All maps and cross sections will be updated when necessary.

**512.200. PLANS AND ENGINEERING DESIGN.**

All plans and engineering designs for excess spoil, durable rock fills, coal mine waste, impoundments, primary roads and variances from approximate original contour will be certified by a qualified registered professional engineer.

**512.210. EXCESS SPOIL.**

The professional engineer experienced in the design of earth and rock fills will certify the design according to 535.100.

**512.220. DURABLE ROCK FILLS.**

The professional engineer experienced in the design of earth and rock fill will certify that the durable rock fill design will ensure the stability of the fill and meet design requirements according to 535.100 and 535.300.

**512.230. COAL MINE WASTE.**

The professional engineer experienced in the design of similar earth and waste structures will certify the design of the disposal facility according to 536.

**512.240. IMPOUNDMENTS.**

The professional engineer will use current, prudent, engineering practices and will be experienced in the design and construction of impoundments and certify the design of the impoundment according to 743.

#### **512.250. PRIMARY ROADS.**

The professional engineer will certify the design and construction or reconstruction of primary roads as meeting the requirements of 742.420.

#### **512.260. VARIANCE FROM APPROXIMATE ORIGINAL CONTOUR.**

If a variance from approximate original contour is required, the professional engineer will certify the design for the proposed variance, as described under 270, in conformance with professional standards established to assure the stability, drainage and configuration necessary for the intended use of the site.

#### **513. COMPLIANCE MSHA REGULATIONS AND APPROVALS.**

##### **513.100. COAL PROCESSING WASTE DAMS OR EMBANKMENTS.**

There are no coal processing waste dams or embankments constructed within the Mine Permit Area. Should coal processing waste dams or embankments become necessary compliance with MSHA, 30 CFR 77.216-1 and 77.216-2 will be met. (see 528 and 536.820).

##### **513.200. IMPOUNDMENTS/SEDIMENT PONDS.**

There are no impoundments/sediment ponds which meet the MSHA size or qualifying criteria within the Mine Permit Area. Should impoundments and sedimentation ponds meeting the size or other qualifying criteria of MSHA, 30 CFR 77.216(a) become necessary compliance with the requirements of MSHA, 30 CFR 77.216. will be met. (see 533.600, 742.222, and 742.223).

##### **513.300. DISPOSAL OF UNDERGROUND DEVELOPMENT WASTE COAL PROCESSING WASTE, OR EXCESS SPOIL.**

Should it become necessary to dispose underground development waste, coal processing waste, or excess spoil in the underground mine workings, it shall be accomplished in accordance MSHA and the Division (see 528.321)

##### **513.400. REFUSE PILES.**

There are no refuse piles associated with the Mine Permit Area. In the event construction of a refuse pile(s) is necessary, the requirements of MSHA, 30 CFR 77.214 and 77.215 will be met. (see 536.900).

##### **513.500. SURFACE OPENINGS.**

Each shaft, drift adit, tunnel, exploratory hole, entry or other opening to the surface from the underground will be capped, sealed, backfilled or otherwise properly managed consistent with MSHA, 30 CFR 75.1771 (ref. to 551).

##### **513.600. DISCHARGES INTO AN UNDERGROUND MINE.**

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Currently there is no discharge into the underground mine openings. The underground mine openings were graded near the portal mouth so as not to allow drainage from outside to flow into the mine. The surface mining activity will mine through the portal areas of the inactive underground mines. During this process, the flows from highwall seeps and intermittent spring may flow into the inactive mine workings prior to spoil being pushed into the mine openings. This flow will be minimal as well as seasonal.

The water that migrates into the mine workings will not be degraded. The spoil material from the overburden and the coal seam have been tested and have been found to be non-acid forming.

This discharge into the underground mine openings will have prior approval by MSHA and the Division. (see 731.511.4).

#### **513.700. SURFACE COAL MINING AND RECLAMATION ACTIVITIES. (TIMING AND SEQUENCE)**

The initiation of the surface mining of the barrier coal at the portals located at the Belina Mine site will occur after the underground mining has been completed. This sequence will keep from operating within 500 feet of an active underground mine. The mine workings will be designated as inactive by MSHA immediately after the completion of underground mining.

#### **513.800. COAL MINE WASTE FIRES.**

All fires (intentional or unintentional) are extinguished in accordance with MSHA Regulations by personal specifically trained in fighting coal mine fires. These people are trained according to an MSHA approved fire fighting plan.

Coal mine waste fires are extinguished in accordance with a plan approved by MSHA and the Division (see 528.220).

Coal stockpile fires are extinguished as quickly as possible, the hot spots are removed from the stockpile, spread out and cooled with water and the coal is promptly returned to the stockpile.

#### **514. INSPECTIONS.**

All engineering inspections will be conducted by a qualified registered professional engineer or other qualified professional specialist under the direction of the qualified engineer, except as described under 514.330.

#### **514.100. THROUGH 514.114. EXCESS SPOIL INSPECTIONS.**

Monitoring of all excess spoil fill will be conducted by the qualified registered professional engineer or specialist through out the duration of the project, which includes foundation preparation, removal of organic material and topsoil, placement of underdrains, protective filter systems, final surface drainage systems, final grading and revegetation of the fill(s).

#### **514.120. EXCESS SPOIL CERTIFIED REPORTS.**

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Certified reports will be provided to the Division by the qualified registered professional engineer promptly after each inspection of the fill(s) indicating proper construction and maintenance as designed and that it is in accordance to the approved plan and R645-302 Rules. The report will include any structural instability, weakness, or hazardous condition.

**514.130. EXCESS SPOIL DRAINAGE SYSTEM AND PROTECTIVE FILTERS CERTIFIED REPORTS.**

**514.131.**

Certified reports will include color photographs during and after construction, prior to being covered with the spoil. This pertains to segmented construction as well.

**514.132.**

Excess durable rock spoil placed in single or multiple lifts where the underdrain system is constructed simultaneously with excess spoil placement by the natural segregation of dumped materials, in accordance with 535.300 and 745.300, color photographs will be taken of the underdrain as the underdrain system is being formed.

**514.133.**

Photographs will be of adequate size, scale, and number to depict the site features.

**514.140. INSPECTION REPORTS.**

Copies of all inspection reports will be kept at the General Office.

**514.200. REFUSE PILES.**

Lodestar has not constructed any refuse piles. Should it become necessary to construct a refuse pile(s) a professional engineer or specialist experienced in the construction of similar earth and waste structures will inspect the refuse pile during construction.

**514.210.**

Regular inspections by the engineer or specialist will also be conducted during placement and compaction of coal mine waste materials. More frequent inspections will be conducted if a danger of harm exists to the public health and safety or the environment. Inspections will continue until the refuse pile has been finally graded and revegetated or until a later time as required by the Division.

**514.220. THROUGH 514.224.**

Such inspection will be made at least quarterly throughout construction and during the following critical construction periods of foundation preparation, including the removal of all organic material and topsoil, the placement of underdrains and protective filter systems, the installation of final surface drainage systems, and the final graded and revegetated facility.

**514.230.**

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A qualified registered professional engineer will provide a certified report to the Division promptly after each inspection that the refuse pile has been constructed and maintained as designed and in accordance with the approved plan and R645 Rules. The report will include appearances of instability, structural weakness, and other hazardous conditions.

**514.240.**

A certified report on the drainage system and protective filters will include color photographs taken during and after construction, and before underdrains are covered with coal mine waste. If the underdrain system is constructed in phases, each phase will be certified separately. The photographs accompanying each certified report will be taken in adequate size and number with enough terrain or other physical features of the site shown to provide a relative scale to the photographs and to specifically and clearly identify the site.

**514.250.**

Copies of each inspection report will be retained at the General Office.

**514.300. IMPOUNDMENTS.**

**514.310. THROUGH 514.313 CERTIFIED INSPECTIONS.**

There are no impoundments which meet the MSHA requirements within the Mine Permit Area. Should it become necessary to construct such an impoundment the following will be complied with:

**CERTIFIED INSPECTION**

A professional engineer or specialist experienced in the construction of impoundments will inspect the construction of the impoundment and the engineer will promptly, after each inspection, provide to the Division, a certified report that the impoundment has been constructed and maintained as designed and in accordance with the approved plan and the R645 Rules. The report will include discussion of any appearances of instability, structural weakness or the other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedure and instrumentation and any other aspects of the structure affecting stability.

The professional engineer or specialist experienced in the construction of impoundments will also inspect such impoundment(s) at least yearly until removal of the structure or release of the performance bond.

Impoundments, not subject to MSHA, 30 CFR 77.216, will be examined at least quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

**514.320. WEEKLY INSPECTIONS.**

**WEEKLY INSPECTION**

Impoundments subject to MSHA, 30 CFR 77.216 will be examined in accordance with 30 CFR 77.216-3.

**514.330. QUARTERLY INSPECTIONS.**

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## **QUARTERLY INSPECTION**

Other impoundments, not subject to MSHA, 30 CFR 77.216 will be monitored quarterly by a qualified person designated by the operator for appearance of structural weakness and other hazardous conditions.

### **515. REPORTING AND EMERGENCY PROCEDURES.**

#### **515.100.**

At any time a slide occurs which may have a potential adverse effect on public health, safety or the environment, Lodestar will notify the Division as soon as possible and will comply with the remedial measures required to stabilize the slide.

#### **515.200. IMPOUNDMENT HAZARDS.**

If during an examination or inspection of an impoundment, there is a potential hazard discovered, the person(s) who have examined the impoundment will inform the Division of the finding and of the emergency

procedures formulated for public protection and remedial action. If adequate procedures cannot be formulated or implemented, the Division will be notified immediately.

#### **515.300. TEMPORARY CESSATION.**

#### **515.310. THROUGH 515.311.**

During a temporary cessation, provisions of the approved permit will be carried out. All mine portals will be maintained and the surface facilities will be secured where there is no current operations.

#### **515.320.**

Should a temporary cessation of coal mining and reclamation operations of 30 days or more occur, the division will be notified by registered letter, which will contain the following required information.

1. Exact number of surface acres,
2. Horizontal and vertical extent of subsurface strata in the Mine Permit Area prior to cessation,
3. Extent and kind of reclamation of surface area which will have been accomplished, and identification of the backfilling, regrading, revegetation, environmental monitoring, portal closures and water treatment activities taking place during temporary cessation.

### **520. OPERATION PLAN.**

#### **521. GENERAL.**

This plan includes maps, cross sections, narratives, descriptions, and calculations indicating how the relevant requirements are met. Also the permit describes and identifies the lands subject to coal mining and reclamation operations over the estimated life of the operations.

#### **521.100. CROSS SECTIONS AND MAPS.**

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Cross sections and maps show all relevant information required by the Division. See the Map index.

#### **521.110. PREVIOUSLY MINED AREAS.**

#### **521.111.**

Pleasant Valley Mining District Map 521.111 shows the approximate location and extent of known workings of active, inactive, or abandoned underground mines, including mine openings to the surface within the Mine Permit Area and adjacent areas. The Pleasant Valley Mining District Map, is not intended to be certified, as only the larger mines are depicted to show general reference to the District.

#### **Map 521.111. Pleasant Valley Mining District**

#### **521.120. EXISTING SURFACE AND SUBSURFACE FACILITIES AND FEATURES MAPS.**

#### **521.121.**

The maps show all buildings within 1000 feet of the Mine Permit Area, with identification of the current use of the buildings (see Map 521.122 and Maps 521.124 Sheets 1 through 4).

#### **521.122.**

Location of surface and subsurface man-made features within, passing through, or passing over the Mine Permit Area are depicted on Map 521.122. The disturbance at the White Oak mine site occurred after August 3, 1977.

#### **Map 521.122. Surface Features**

#### **521.123.**

All public roads located in or within 100 feet of the Mine Permit Area are shown on Permit Area Base Map 100.

#### **521.124.**

All pertinent features of this section are exhibited on Maps 521.124 Sheet 1 through Sheet 4.

#### **Map 521.124. Valcam Loadout Facility Disturbance - Sheet 1**

#### **Map 521.124. Belina Haul Road - Lower Section Disturbance - Sheet 2**

#### **Map 521.124. Belina Haul Road - Upper Section Disturbance - Sheet 3**

#### **Map 521.124. Belina Mine Site Disturbance - Sheet 4**

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#### **521.125.**

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For the location of each sedimentation pond (001A through Dugout D-1) and the filter pond (005A), see 521.124.

#### **521.130. LANDOWNERS AND RIGHT OF ENTRY AND PUBLIC INTEREST MAPS.**

#### **521.131.**

All boundaries of lands and names of present owners of record of both surface and subsurface within the Mine Permit Area are shown on the Surface Ownership Map 112.500 and the Coal Ownership Map 112.600, respectively.

#### **521.132.**

The permit boundary is shown on all applicable maps.

#### **521.133. THROUGH 521.133.2.**

N/A

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#### **521.140. MINE MAPS AND PERMIT AREA MAPS.**

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#### **521.141.**

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The boundaries of all areas affected over the estimated total life of the coal mining and reclamation operations, with size, sequence and timing of the mining of subareas for the lands to be affected. See maps 521.141a, 521.141b. and Plate 5-1A and 5-1B in Section 10.

**Map 521.141a. Belina No. 1 Mine Progress Map**

**Map 521.141b. Belina No. 2 Mine Progress Map**

**Plate 5-1A. White Oak No. 1 Mine - 5 yr. Mine Plan**

**Plate 5-1B. White Oak No. 2 Mine - 5 yr. Mine Plan**

**Plate 5-1C. White Oak Surface Mining Plan - Barrier Coal Removal**

**Plate 5-1D. White Oak Surface Mine - Upper O'Connor Seam**

**Plate 5-1E. White Oak Surface Mine - Lower O'Connor Seam**

Within the Disturbed Area Boundary four types of disturbances exist and are shown on Sediment Control Facilities Maps 731.720a through 731.720d.

#### **521.142. PLANNED SUBSIDENCE MINING METHODS.**

Mining conducted at White Oak Mines 1 and 2 is accomplished utilizing the "Room and Pillar" method of mining. No other mining methods have ever been used within any of the Lodestar mines or White Oak Mines here in Utah. Should any change be made in methods used, UDOGM will be notified.

Subsidence "Projected Draw Angles" and "Mine Plan Projection Lines" are utilized by Lodestar to plan mining activities in conformance with the regulations as they relate to the protection of surface features in that they prevent, control, or minimize subsidence and subsidence related damage. See Maps 728.100a and 728.100b.

#### **1999 MODIFICATION TO LEASE U-017354**

A stipulation in the 1999 modification to Lease U-017354 is that no surface impacts, including subsidence is to occur due to mining activities. Mining conducted at the White Oak Mines 1 and 2 within the incidental boundary change associated with Federal Lease U-017354 will be accomplished by developing coal pillars on seventy foot centers (70 foot by 70 foot undeveloped pillar projections) by driving twenty foot wide entries (rooms). Fifty foot square pillars will remain; this calculates to an extraction ratio of approximately fifty

percent by area. This will vary slightly due to the cutting of pillar corners to enhance shuttle car travel, but the percentile of remaining support coal should never vary lower than 48 percent.

Only primary development mining of coal support pillars will occur in lease modification U-017354, where seventy by seventy foot centers are implemented. By driving twenty foot wide entries, the 50 percent extraction ratio will be maintained. There will be no secondary extraction of coal, either by slabbing or by pocket and wing methods as approved within the MSHA roof and rib control plan, on pillars developed on 70 foot centers.

If coal support pillars have been developed on larger than seventy foot centers, secondary extraction (i.e., slabbing) may be practiced if the plan view area of the coal remaining in the pillar is at least fifty percent of the centers being developed.

Secondary extraction of larger pillars may be done by slabbing or by MSHA approved pocket/wing extraction methods. In every pillar center design, at least fifty percent of the plan view area of the pillar will remain as support coal. There will not be any full extraction of coal pillars within the lease modification area, regardless of the size of pillar centers developed. All pillar reduction will be dependent upon geology in the area, and by decision of the Mine's production management in conjunction with criteria established by this mining and reclamation plan.

The mining of bottom coal may be practiced where seam thickness warrants the recovery of coal. This will be performed during the development process or during retreat mining, and will be determined by the Mine's production management, in coordination with the MSHA approved roof and rib control plan. Pillar slabbing will not be practiced in conjunction with the mining of bottom coal.

To prevent plug type subsidence in the area of the incidental boundary change, mining will be limited to areas of greater than 200 feet of cover above the uppermost seam. Overburden ranges from 1000 feet to 300 feet in a small area located on the southern boundary. Eighty percent of the area has greater than 500 feet of overburden.

The primary development of pillars on a minimum of seventy foot centers along with the extraction of bottom coal, and second mining of pillars having centers >70 feet, in conjunction with the monitoring plans for extraction ratio, pillar stacking, and subsidence detailed below will provide a mining plan which has a great potential for meeting the requirements of the USFS and BLM stipulation of "no surface impacts, including subsidence" (Attachment A, Section 10).

## **MONITORING**

**Monitoring of Pillar Stacking.** Primary development mining of coal support pillars (minimum 70 foot centers) and secondary extraction of bottom coal will be practiced in both the upper and lower O'Connor coal seam (White Oak Mines 1 and 2). The top seam will be mined first, as outlined on Plate 5-1B from year 2001 through 2003. Frequent engineering check surveys will be conducted to ensure that entry development is conducted according to the mine plan, as projected on Plate 5-1B. This information will be used to correlate the stacking of pillars in the No. 2 Mine, as indicated on Plate 5-1A. Check surveys will be conducted to insure that pillar stacking is occurring.

The stacking of pillars will be monitored by the Mine's engineer to insure that a success ratio of better than 90 percent is occurring in the stacking of pillars between the two coal seams. A report certified by the professional engineer monitoring the stacking will be forwarded to the Division and the concerned surface management agency on a quarterly basis.

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**Monitoring of Extraction Ratio.** The approved "maximum of fifty percent extraction of coal by plan view area" will be monitored by comparing daily/monthly production records against mine maps. The calculations, along with mine maps showing where bottom coal has been extracted and where slabbing or pocket and wing extraction methods have been utilized will be forwarded quarterly to the BLM and the Division, for confirmation. The extraction methods will be recorded on a shift by shift basis and records will be maintained by the Mine's engineer.

**Subsidence Monitoring.** To establish baseline elevations for subsidence monitoring of the four proposed mining areas in lease modification area U-017354, four subsidence monitoring points as shown on Plates 5-1A and 5-1B will be installed prior to the development of the Upper O'Connor seam in the area. Differential level and pedestrian walk-over surveys will be conducted twice the first year mining occurs within the least modification area, then once a year thereafter (post-snow melt and pre-snow fall). If subsidence is detected the subsidence monitoring will be reinstated to twice a year. The information accumulated will be compiled, analyzed, certified by a P.E. and submitted to the Division within forty-five days after the collection of the data.

Monitoring of the subsidence control points and the overlying surface will occur until no longer deemed necessary by the Division and the concerned surface management agency.

### **SUBSIDENCE MITIGATION PLAN**

Any impacts to surface lands which are the result of mining induced subsidence will be repaired to the extent technologically and economically feasible, to meet the requirements of R645-301-525.510.

#### **521.143. DISPOSAL SITES.**

There are currently no disposal sites for underground development waste or excess spoil located within the Mine Permit Area.

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#### **521.150. LAND SURFACE CONFIGURATION MAPS.**

Maps 521.150 Sheet 1 through Sheet 4 show Lodestar disturbed area boundaries within the Mine Permit Area.

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##### **Map 521.150. Valcam Loadout Surface Facilities - Sheet 1**

##### **Map 521.150. Belina Haul Road - Lower Section Surface Facilities - Sheet 2**

##### **Map 521.150. Belina Haul Road - Upper Section Surface Facilities - Sheet 3**

##### **Map 521.150. Belina Haul Road - Belina Mine Site Surface Facilities - Sheet 4 (See Note)**

##### **Map 521.150. White Oak Mine Site Surface Facilities for Underground Mining - Sheet 4a**

##### **Map 521.150. White Oak Mine Site Surface Facilities for Surface Mining - Sheet 4b**

##### **Map 521.150. White Oak Mine Site Surface Facilities After Initial Reclamation - Sheet 4c**

**Note:** Map 521.100 Sheet 4 is to be placed in Appendix R2 as a reference for the areas that were disturbed and left undisturbed at the Belina Mine site.

#### **521.151.**

All design related contour maps show contours at least 100' above and below the coal outcrop where applicable.



**521.152.**

The maps showing previously mined areas have contour lines at least 100' beyond the limits of mining disturbances where applicable.

The "adjacent to" previously mined areas are shown on the mine maps, but are based on historic data and were not certified by the criteria of today's standards.

**521.160. MAPS AND CROSS SECTIONS OF THE PROPOSED FEATURES FOR THE PROPOSED PERMIT AREA.**

**Map 521.160. White Oak Complex Cross-sections Surface Mining Area - Sheets a-d**

**521.161. THROUGH 521.169.**

The area to be affected within the disturbed area boundary during the surface mining process to remove the barrier coal during reclamation process is shown on Plate 5-1C.

Potential topsoil storage areas identified at the White Oak Complex are located and cross sectioned with potential volumes for storage of material. See Map R645-301-521.165 for locations, volumes and cross sections.

**Map 521.165. Potential Topsoil Storage Pile Cross-sections**

**521.170. TRANSPORTATION FACILITIES MAPS.**

The transportation facilities are shown on Maps 521.124 Sheet 1 through Sheet 4.

**521.200. SIGNS AND MARKERS SPECIFICATIONS.**

**521.210. THROUGH 521.230.**

Signs and markers are posted, maintained, and will be removed by Lodestar and are uniform design that can be readily seen and read; durable; and conform to local laws and regulations.

**521.240. THROUGH 521.244. MINE AND PERMIT I.D. SIGNS.**

Identification signs are displayed at each point of access to the Mine Permit Area from public roads and display name, address, phone number, and UDOGM I.D. number of the permittee. Signs will be maintained until after the release of all bonds for the Mine Permit Area.

**521.250. PERIMETER MARKERS.**

**521.251.**

All perimeter markers are clearly marked with orange markings on trees, orange or red painted "tee" posts.

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**521.260. BUFFER ZONE MARKERS.****521.261.**

Buffer zone signs are located so as to prevent disturbance by the surface facility operations and meet the requirements of 731.600.

**521.270. TOPSOIL MARKERS.**

Topsoil signs are in place at the Belina Mine Site and at the Valcam Loadout Facility. The sign at Belina is 18" x 24" and reads;

**BELINA MINE  
TOPSOIL  
STORAGE AREA  
DO NOT DISTURB**

**522. COAL RECOVERY.**

Lodestar Energy, Inc. operates the White Oak (Belina) No. 1 Mine (currently temporarily sealed), and the White Oak (Belina) No. 2 Mine, both of which are near the head of Whisky Canyon, approximately 4.5 miles south of Scofield, Utah. Mining is currently being conducted in accordance with the Permit approved February 10, 1977, and Utah Division of Oil, Gas, and Mining Permit ACT/007/001.

The Valley Camp operation originated under the Coal Exploration and Mining Operations Rules, 30 CFR 211, which governed operations for the exploration, development, and production of coal from Federal lands in accordance with the requirements of the Mineral Leasing Act of 1920 and its amendments. In 1983 Valley Camp provided Minerals Management Service with a cross-reference index from the State regulations to the 30 CFR 211 regulations to aid in their review of the MRP. The BLM office for the Price River Resource Area approves all Lodestar mining plans and modifications, as well as inspects the mine(s) to assure there are no detrimental effects on recoverable reserves and that Lodestar satisfies the requirements of maximum economic recovery of the federal coal resource. Please refer to the 1984 OSM Technical Analysis, Chronology of Events, Date; February 10, 1997, Event USGS issues 211 permit for Belina #1 mine covering the existing Belina #1 mine (Upper O'Connor seam).

The Belina No. 1 Mine and the Belina No. 2 Mine are located in the Upper and Lower O'Connor Seams, respectively. Each seam ranges in thickness from 5 feet to 25 feet, with the average of each being approximately 16 feet. Also see Section 523 and Plates 5-2A, 5-2B, 5-3A, and 5-3B (Section 10). The Belina Mines are currently operating under an approved Mine Plan approved by the Bureau of Land Management. As part of the approval Lodestar is required to maximize the use and conservation of the coal resource, using the best technology currently available as well as protect the integrity of the land.

The Belina Mines are surrounded by major faults and will have virtually no impact to adjacent coal reserves as outcrop entry into the coal seams are not readily available leaving shaft access as the only feasible entry into the coal seams.

The surface mining plan at the White Oak Complex is to recover the barrier coal in the Carbon County lease. The surface mining sequence is shown on Plate 5-1C. The facilities on the upper mine bench consisting of the sewage treatment building, bathhouse, shop, diesel storage, pump house, filter pond 005A, substation and power poles along with the fan houses, portals, transfer building, and conveyor No. 2 will be removed as part of starting the surface mine. The VSM along the face of the bench between the bathhouse and coal storage

area will be recovered first and the process of clearing and grubbing the adjacent areas to be mined will be completed in steps. The soils in the Whisky Creek channel will be collected and stored separately. The soils in the pine areas will be stored separate from the aspen areas.

The first three months of the surface mining process will produce a temporary spoil storage area in the area adjacent to the White Oak #2 mine portals. This material will be available to fill in areas short of material to complete the reclamation grade and to fill in the final pit. The surface mining process will go as follows. Areas are cleared and grubbed of trees, topsoil is removed and stored. Benches are prepared for the drilling and blasting process. The rock above the coal seam is drilled and shot. If this rock is greater than 60 feet in thickness it will be blasted in two lifts. The blasted material is then moved into the temporary spoil storage pile or the adjacent pit by front-end loader and truck and/or the pushing of dozer(s). The mining sequence will consist of areas where dozers are making benches for the drill, the drilling of blast holes, the pushing and loading of spoil, the removal of the exposed coal by front-end loader, excavator and highway trucks. This work will occur at multiple areas of the mining area being disturbed.

The process of snow removal is as follows. Due to the activity occurring throughout the area the snow that falls will not accumulate in all winter quantities. The bench construction process will push any snow accumulation ahead of the construction of the drill benches. The snow that falls on the exposed coal will be pushed off the coal for loading and will remain in the pit. The snow that falls on the blasted material will only accumulate over the idle shift as this material will be in the process of being moved on two shifts a day. This snow will be mixed into the spoil material during the process of moving this material to the adjacent location. The minimal water content of the snow and the reduced quantity that will be intermixed with the placed spoil will not effect the stability of the reclaimed slopes.

Due to the seam dip and the gradation of the placed spoil material against the highwall, saturation of this material will be minimal. A slope stability analysis is included for partial saturation in Appendix R2.

### **523. MINING METHOD(S).**

The underground Mine Plan calls for mining in the upper 12 feet of each coal seam. Approximately 2 feet of the upper-most coal are left in place to aid roof support. The next 10 feet (first mining) below is mined using a continuous miner. The remaining bottom coal is then extracted during the retreat (second mining) from each mining section, except where designated otherwise, such as in the 1999 modification of Lease U-017354.

Development mining techniques include a main entry system, a sub-main entry system developed off the mains, and room and pillar panels which are developed off the sub-mains. Components of each are described as follows:

- a. Main Entry System-South-Composed of 5 entries (4 intakes and 1 neutral belt line), and 3 return entries on each side.
- b. Main Entry System-West-Consists of 5 entries, 2 intakes, 2 returns and 1 neutral belt line.
- c. Sub-main systems developed using 3 entries, 1 intake, 1 neutral belt line and 1 return.
- d. Room and pillar entries consist of Multi-entries, intakes, returns, and 1 neutral belt line.
- e. Room and pillar entries (bottom coal) Mid 1989, utilizes multi-intakes, 1 neutral belt line and multi-returns.

Room and pillar mining has been the only production method employed thus far.

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For safety and recovery maximization, the Upper O'Connor coal seam will be mined first in a particular location. Other mining methods which would improve utilization of the resource by increasing recovery are presently being investigated.

At present, protection of the gas lines is provided by limiting pillar extraction under these lines. The size of the restricted area of mining is determined by a 35 degree angle-of-draw from the gas lines down to the seams. It is hoped that negotiations with the gas company and Federal and State agencies will result in the assumption of a steeper angle of draw, thus increasing the recovery while providing adequate support for the gas lines.

Non-recovery areas within the Mine Permit Area are only those areas remaining between mined out sections used for ventilation barriers, property line barriers, areas where the seams are so thin that mining is uneconomical, areas where adverse mining conditions jeopardize the safety of employees and areas within a 150 foot radius of all oil and gas wells located in the Mine Permit Area (State and Federal requirements).

The current Mine Plan is described as the "Double Lift" mining method. This method utilizes a Remote Control Continuous Miner developing seven entries incorporating 60' x 60' room (X-Cuts) centers. The double lift mining will leave 18' to 20' high pillars with cross-sectional dimensions of 40' x 40'.

For further details see the Ground Control Study For Double Lift Mining Panels; August 1989; Kenneth C. Ko & Associates report. Appendix 523 Labeled "Confidential". Copies are held at the Division office in Salt Lake City, Utah.

The current design production level is 450,000 tons per year for Belina No. 2 Mine, actual production rates are below the designed maximum capacity because of present market conditions.

The primary mining equipment includes:

Joy 12RC continuous miner  
Joy 10SC shuttle cars  
Long-Airdox feeder breakers

Joy 12CM continuous miners  
ATS roof bolters  
Mantrips

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The coal is cut from the working face by a Joy 12CM or Joy RCCM miner. Joy 10SC shuttle cars transport the coal to a Long-Airdox feeder breaker, which reduces the coal to a size compatible for the belt conveyors transporting the coal to the surface stockpile, used by both mines.

A variety of loaders, ramcars, compressors, transformers, and other miscellaneous support equipment are also used underground.

Reserve calculations are based upon a five foot cutoff height due to economic and equipment constraints.

An underground reclaimer belt transports the coal from the outside stockpile to a 30 ton truck loading bin. The coal is then hauled to the Valcam Loadout Facility by a contract trucking company. The contractor utilizes bottom-dump trailers pulled in tandem, or one bottom dump trailer during inclement weather. Because of the moisture content of the product, coal dust emitted from haulage activities is not a problem. In the event coal dust does become a problem, the appropriate control measures will be taken.

Spillage is controlled by limiting the trucks to loads which will not spill over the tops of the trailers while cornering, and by instructing drivers to keep the trailer dump gates closed during return trips.

The Roof Control Plan has been approved by MSHA. Their approvals are based on specific site conditions, mining experience in the area, and geologic information available. The approved Roof Control Plan addresses size of underground openings, pillar size, roof support methods, cross-cut centers, and coal recovery methods.

The design and operation of the mines comply with accepted engineering practices, and with all regulatory requirements. Ventilation Plan, Roof control Plan, and all other MSHA required plans are on file with MSHA and in the Belina Mine Office.

The surface mining mine plan of the barrier coal is planned to recover a large portion of the coal adjacent to the portal accesses at the White Oak Complex. The surface mining operation will remove barrier coal and some underground pillars. The area to be mined encompasses the maximum economic recovery of the remaining barrier coal in this area by recovering coal that would otherwise be left by the underground mining process. The factors limiting the amount of coal to be recovered are the depth of overburden to the coal seam, and second mined underground workings. The disturbed area boundary was enlarged to recover the maximum reserves available.

The initial phase will start with the removal of facilities that are in the path of the surface mining projection, the installation of ditches 2001, 2002 and Dugout D-1, along with removal of topsoil in the areas that will be mined during the winter months. Topsoil removal and storage will start with the VSM material along the slope below the bathhouse, the area adjacent to upper Whiskey Creek, upper Whiskey Creek, and a portion of the topsoil above the bathhouse. The size area of topsoil removal will be weather dependant. The initial stages of the mining plan will recover the Lower O'Connor Seam along the bench where the bathhouse facilities are located by moving the rock material that covers this seam. The rock material will be stored adjacent to this area on the coal storage pad and truck loadout area in a temporary spoil storage pile. This pile should have the greatest volume during the fourth and fifth months of operation. This rock material will then be used to supplement a material shortage during rough grading and to reclaim the final pit generated during the surface mining process. The remaining areas of topsoil will be removed in the spring and early summer for storage ahead of the mining process. The topsoil storage sites will be in stable areas adjacent to the removal area when possible. On locations near sediment pond 004A, unused roadways, and on part of the flattened area of the spoil storage pile. The maximum topsoil to be stored at one time will should not exceed 60,000 cubic yards.

Once the lower bench area has been removed, the surface mining operation starts an initial pit in the Upper O'Connor seam. The overburden and the interburden over the second pass in the Lower O'Connor will be used to fill the pits in the lower bench and behind the coal removal process in the upper bench. The rock material in this process will be rough graded for stability and erosion resistance. The topsoil will then be replaced on the graded areas when it is seasonally preferred to do the re-seeding.

The upper portion of Whiskey Creek is planned to be disturbed during this process. A stream alteration permit has been applied for and approved. See Appendix R-2.

The method to be utilized is referred to as contour mining. This method develops a pit along the lower contour. Once the coal has been removed, this pit is used for the placement of material from the upper contour. The material is pushed by tracked dozers as much as possible, hauled by rock trucks when necessary, and placed when required by wheel loaders and an excavator. Pushed material is rough graded when it is no longer required to be moved again or re-handled.

The production level of the surface mining process is expected to be 600,000 tons per year. The coal removal process is expected to be completed in 12 to 14 months. During the last two months of operation the temporary spoil pile will be moved to the final pit location to fill that pit and any remaining material will be distributed in low areas, saved for pond reclamation and used to create grade breaks.

The primary mining equipment or equivalent includes:

- |                                   |                                    |
|-----------------------------------|------------------------------------|
| (2) Caterpillar D10N Dozers       | (1) D9R Dozer                      |
| (1) Caterpillar 992C Wheel Loader | (2) Caterpillar 988F Wheel Loaders |
| (1) Caterpillar 980G Wheel Loader | (3) Caterpillar 777C Rock Trucks   |

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(1) Caterpillar 345BL Excavator  
(1) Caterpillar 769C Water Truck  
Maintenance vehicles (Pickup style)

(1) Ingersol-Rand DML Drill  
(1) Caterpillar 16G Grader

Once the rock has been removed from a pit location by use of dozers, wheel loaders, and rock trucks. The coal will be removed using graders to clean the rock from the top of the coal, wheel loaders and excavator to load contractor operated bottom dump tandem highway trucks in the pit. The grader will also be used to maintain an access road to the pit and the water truck to keep roadways moist to reduce dust.

The design and operation of this process will comply with accepted engineering practices, and with all regulatory requirements. A Blasting Plan and Ground control plan will be on file with MSHA and at the mine site office.

**523.100. SURFACE COAL MINING AND RECLAMATION. (ACTIVITIES PROPOSED WITHIN 500 FEET OF AN UNDERGROUND MINE)**

The Valcam Loadout Facility and the Utah No. 2 Mine (prelaw mine) now closed and sealed is in fact located within the 500 foot limitations of the old Utah No. 1, which is the oldest known mine in the Pleasant Valley Mining District. The General Office Area, Belina Haul Road, or the Belina Mines are not within the 500 foot limitations of any known abandoned underground coal mine(s).

The surface mining process at the White Oak Complex will be within 500 feet of an inactive mine. The underground mining process will be complete before blasting begins for the surface mine. The portal entrances will be controlled to prevent access to the underground mine workings during the surface mining process.

**523.200. SURFACE COAL MINING AND RECLAMATION. (ACTIVITIES CONDUCTED CLOSER THAN 500 FEET OF AN UNDERGROUND MINE.)**

The Utah No. 2 Mine and the coal handling facilities (known as the Valcam Loadout Facility) are closer than 500 feet of the old Utah No. 1 Mine and are exhibited on an MSHA Approved mine map, however the old Utah No. 1 Mine maps can not be certified by today's standards.

In the event that new mining or new reclamation activities are proposed within 500 feet of the adjacent workings of the Utah No. 1 Mine, Lodestar will seek approval from MSHA and the Division in accordance with the requirements of this section.

The surface mining of the barrier coal at the White Oak Complex will maximize the recovery of coal reserves that would otherwise be left by underground mining. The ground water evident in the area of mining is minimal and will not be adversely affected by this operation and the subsequent reclamation. The surface water flows that report to Whisky Creek will report to sediment control structures during the mining and reclamation process and the stream alteration and restoration plan is approved to put the stream water flow back into lower Whisky Creek. The material that the spoil is comprised of has been tested and determined to be non-toxic, so water quality will not be compromised.

The surface mining of coal in the barriers at the White Oak Mine Site will not be started until the underground mining activity is completed at the White Oak No. 2 Mine. MSHA's approval of the Blasting and Ground Control plans recognize that the mines are inactive. The removal of coal by surface means will be completed prior to the permanent sealing of the mine portal openings. Access to the underground portion of the mines will be restricted during the surface mining process.

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**524. BLASTING AND EXPLOSIVES.**

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Lodestar Energy, Inc. will not routinely utilize surface blasting for underground coal mining activities. Surface blasting will however be necessary during the surface mining of barrier coal at the White Oak (Belina) Complex. MSHA has issued a new identification number 42-02315 for the Whisky Creek Mine No. 1. In accordance with the requirements of this section, a blasting plan will be provided to the Division and MSHA when required. See Appendix 524 for MSHA Blasting Plan and MSHA Ground Control Plan. Each blasting plan will contain a description of any system to be used to monitor compliance with the standards of 524.600 including the type, capability, and sensitivity of any blast-monitoring equipment and proposed procedures and within 500 feet of active underground mines require approval of MSHA. Blasts that use more than five pounds of explosive or blasting agent will be conducted according to the schedule provided under 542.400.

**524.100. BLASTERS CERTIFICATION.**

Lodestar will, prior to conducting any surface blasting operations, ensure that all surface blasting operations incident to surface and underground coal mining in Utah will be conducted under the direction of a Utah certified blaster. Certificates of blaster certification will be carried by blasters or will be on file at the Mine Permit Area during blasting operations. A blaster and at least one other person will be present at the firing of a blast.

Persons responsible for blasting operations at a blasting site will be familiar with the blasting plan and site-specific performance standards and give on-the-job training to persons who are not certified and are assigned to the blasting crew or assist in the use of explosives.

Lodestar has plans to use explosives as part of the barrier coal removal, therefore detailed blasting plans are present in the permit. See Appendix 524. Blasting is required to facilitate the breaking of overburden and interburden rock and demolition of foundations, the blast design submitted for all blasts conducted within 1,000 feet of any building used as a dwelling, public building, school, church, or community or institutional building outside the permit area or within 500 feet of an active or abandoned underground mine (MSHA). The blast design requiring more than five pounds of explosive or agent, will be submitted for Division and MSHA approval, prior to blasting. The blast design will contain sketches of the drill and delay patterns, decking, type and amount of explosives required per blast, critical dimensions, design factors utilized to protect the public, general location map of protected structures, and meet the applicable airblast, flyrock, and ground vibration standards in 524.600.

The blast design will be prepared using accepted standard design practices and signed by a certified blaster.

**524.300. PREBLASTING SURVEY.**

A preblasting survey will be conducted when any amount of blasting agent or explosive per blast is to be used for surface mining.

As part of the preblasting survey Lodestar will:

- I. Notify, in writing, all residents or owners of dwellings or other structures located within one-half mile of the blasting site in the Mine Permit Area how to request a preblasting survey at least 30 days before initiation of blasting.
- II. Any resident or owner of a dwelling or structure within one-half mile of the blasting site in the Mine Permit Area who requests a preblasting survey in writing, directly to Lodestar Energy, Inc. or to the Division, will have a preblast survey conducted by Lodestar of the dwelling or structure and promptly prepare a written report of the survey. An updated survey of any additions, modifications, or renovations will be performed by Lodestar if requested by the resident or owner.

- III. Lodestar will determine the condition of the dwelling or structure and will document any preblasting damage and other physical factors that could reasonably be affected by the blasting. Structures such as pipelines, cables, transmission lines, and cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.
- IV. A written report of the survey will be signed by the person who conducted the survey. Copies of the report will be promptly provided to the Division and to the person requesting the survey. If the person requesting the survey disagrees with the contents and/or recommendations contained therein, he or she may promptly submit to both Lodestar and the Division a detailed description of the specific areas of disagreement.
- V. Any surveys requested more than ten days before the planned initiation of blasting **INCORPORATED** prior to blasting.

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All blasting will be conducted between sunrise and sunset Monday through Saturday and on Sunday only if weather conditions or an emergency warrants. There will be no nighttime blasting unless it is approved by the Division which exhibits the public will be protected from adverse noise and other impacts. For the purpose of underground coal mining, surface coal mining and reclamation, the residents and local governments within one-half mile of the blasting site will receive written notification of the proposed times and locations of the blasting operation. Notice of that blasting schedule may be announced weekly, but in no case less than 24 hours prior to blasting.

For the purposes of surface coal mining and reclamation activities, Lodestar will publish the blasting schedule in a newspaper of general circulation in the locality of the blasting site at least ten days, but no more than thirty days, before beginning the blasting program. Copies of the schedule will be distributed to local governments, public utilities and to each local residence with-in one half mile of the proposed blasting site described in the schedule. The schedule will be republished and redistributed at least every 12 months and will revise and republish the schedule at least ten days, but not more than thirty days, before blasting whenever the area covered by the schedule changes or actual time periods for blasting significantly differ from the prior announcement. See Notice of Blasting Schedule.

Unscheduled blasts will be conducted only where public or operator health and safety so requires and for emergency blasting actions. When an unscheduled surface blast incidental to the coal mining and reclamation operation occurs, the use of audible signals, will notify residents within one-half mile of the blasting site and will be recorded in the blasting records of why the unscheduled blasting was required.

### **NOTICE OF BLASTING SCHEDULE**

Lodestar Energy, Inc., HC35 Box 370, Helper, UT 84526, gives notice that blasting operations will be conducted on its coal mine permit. The blasting operations will be contained on approximately **29.4** surface acres within the disturbed area of the mine complex. This acreage is owned by Lodestar Energy, Inc, and Milton Omen, LTD.

Said operation is located approximately 2 miles south west of the intersection of highways 96 and 264 in the Whisky Creek Canyon. The latitude is 39 ° 39' 55.6" and the longitude is 111 ° 11' 16.4". Detonations of explosives will occur from sunrise to sunset during November 1, 2001 to April 30, 2003. Blasting will not occur on Sunday unless weather conditions or an emergency warrant detonation. Entry to the blasting area will be regulated by signs and barriers. An authorized company representative will prohibit access to the blasting areas by unauthorized persons at least ten (10) minutes before each detonation. Before each blast is detonated, the following type(s) of audible warning will be given: Five (5) minutes prior to the blast, three (3)



long sounds of an air horn or siren: immediately before the blast, three (3) short sounds of an air horn or siren. The all-clear signal after blasting will be one (1) long blast from an air horn or siren. These signals will be audible within one half mile of the blasting site. Events which could necessitate blasting at unscheduled times include, but are not limited to rain, lightning, other atmospheric conditions, or deteriorated explosives which involve personnel, operational or public safety. Any major alteration of this blasting schedule will be published. This notice is published pursuant to State of Utah R645 and the regulations relating thereto. Utah Permit Number C/007/001 and MSHA ID Number 42-02315.

The attached sample blasting schedule will be published according to the above mentioned parameters.

#### **524.500. BLASTING AND WARNING SIGNS, ACCESS CONTROL.**

Blasting signs will read "**BLASTING AREA**" and be conspicuously placed along the edge of any blasting area that comes within 100 feet of any public road Right-of-Way, and at the point where any other road provides access to the blasting area. At all entrances to the Mine Permit Area from public roads or highways, signs conspicuously placed which read "**WARNING! EXPLOSIVES IN USE**", which clearly list and describe the meaning of the audible blast warning and all-clear signals in use, and explain the identification of blasting areas where charged holes await firing at the blasting site in the Mine Permit Area.

Warning and all-clear signals of different character or pattern that are audible within a range of one-half mile from the point of the blast will be given. Each person who resides or works regularly within one-half mile of the blast site in Mine Permit Area will be notified of the meaning of the signals as required in the blasting notification.

Access within the blasting areas will be controlled to prevent presence of livestock or unauthorized persons during blasting and until an authorized representative of Lodestar has reasonably determined that no unusual hazards, such as imminent slides or un-detonated charges, exist; and, access to and travel within the blasting area can be safely resumed.

#### **524.600. ADVERSE EFFECTS OF BLASTING.**

Blasting will be conducted to prevent injury to persons, damage to public or private property outside the Mine Permit Area, adverse impacts on any underground mine, and change in the course, channel, or availability of surface or ground water outside the Mine Permit Area.

**Airblast Limits.** Airblast will not exceed the maximum limits listed below at the location of any dwelling, public building, school, church, or community or institutional building outside the Mine Permit Area, except for those structures and facilities owned by Lodestar as approved by the Division. Maximum Airblast Limits are as follows:

<b>Lower Frequency Limit of Measuring System, HZ (+ or - 3dB)</b>	<b>Maximum Level dB</b>
0.1 Hz or lower-flat response*	134 peak
2 Hz or lower-flat response	133 peak
6 Hz or lower-flat response	129 peak
C-weighted - slow response*	105 peak dBC

\* Only when approved by the Division.

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**Monitoring.** Periodic monitoring will not be conducted to ensure compliance with the airblast standards. This is due to no surface structures owned by outside parties are within one half mile and no occupied structures within a two miles of the blasting area. The closest structure is a buried Questar pipeline which will not be affected by a surface air blast. The Division may require airblast measurements and specify locations at which such measurements are taken. Should such monitoring be required, the measuring systems used will have an upper-end flat frequency response of at least 200 Hz.

**Flyrock.** Flyrock traveling in the air or along the ground will not be cast from the blasting site - more than one-half the distance to the nearest dwelling or other occupied structure; beyond the area of blasting access control or beyond the Mine Permit Area Boundary.

**Ground Vibration.** In all blasting operations, except as otherwise authorized by the Division, the maximum ground vibration will not exceed the values approved by the Division. The maximum ground vibration for protected structures will be in accordance with the maximum peak-particle-velocity limits, the scaled-distance equation, the blasting-level chart, or by the Division. All other structures in the vicinity of the blasting area such as water towers, pipelines and other utilities, tunnels, dams, impoundments, and underground mines will be protected from damage by establishment of a maximum allowable limit on the ground vibration. These limits will be submitted by Lodestar and approved by the division prior to blasting. A maximum limit of 1.00 in/sec is requested for the surface mining project at the White Oak Complex.

**Maximum Peak-Particle Velocity.** The maximum ground vibration will not exceed the following limits at the location of any dwelling, public building, school, church, or community or institutional building outside the Mine Permit Area in accordance with the following:

## EXPLOSIVES

Distance (D) from Blast Site (ft)	Maximum allowable Particle Velocity (Vmax) for ground vibration (in/second)*	Scaled distance factor to be applied without seismic monitoring** (Ds)
0 to 300	1.25	50
301 to 5,000	1.00	55
5,001 and beyond	0.75	65

\* Ground vibration will be measured as the particle velocity. Particle velocity will be recorded in three mutually perpendicular directions. The maximum allowable peak particle velocity will apply to each of the three measurements.

\*\* Applicable in the scaled-distance equation of  $W = (d/D_s)^{1/3}$ . A seismographic record will be provided for each blast.

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**Scaled-distance equation.** Lodestar may use the scaled-distance equation,  $W = (d/D_s)^{1/3}$ , to determine the allowable charge weight of explosives to be detonated in any eight-millisecond period, without seismic monitoring: where W=the maximum weight of explosives, in pounds; d=the distance, in feet, from the blasting site to the nearest protected structure; and Ds=the scaled-distance factor, which may initially be approved by the Division using the values for scaled-distance factor.

The development of a modified scaled-distance factor, may be authorized by the Division on receipt of a written request by Lodestar, supported by seismographic records of blasting at the mine site. The modified scaled-distance factor of the predicted ground vibration will not exceed the prescribed maximum allowable peak particle velocity at a 95-percent confidence level.

**Blasting-Level-Chart.** The ground-vibration limits may be used to determine the maximum allowable ground vibration. A seismographic record including both particle velocity and vibration-frequency levels will be provided for each blast. The method for the analysis of the predominant frequency contained in the blasting records will be submitted by Lodestar and approved by the Division prior to application of this alternative blasting criterion.

The maximum airblast and ground-vibration standards shown above will not apply at the following locations: At structures owned by Lodestar and not leased to another person; and at structures owned by Lodestar and leased to another person, if a written waiver by the lessee is submitted to the Division prior to blasting.

#### **524.700 RECORDS OF BLASTING OPERATIONS.**

Blasting records will be maintained at the General Office for at least three years and upon request, blasting records will be available for inspection by the Division or the public. Blasting records will contain a record, including: the name of mining company or other authorized contractor conducting the blast; location, date, and time of the blast; name, signature, and certification number of the blaster conducting the blast; his assistant's name, identification, direction, and distance, in feet, from the nearest blast hole to the nearest dwelling, public building, school, church, community or institutional building outside the Mine Permit Area, except those structures and facilities owned by Lodestar; and, weather conditions, including those which may cause possible adverse blasting effects.

The record of the blast will include: The type of material blasted; sketches of the blast pattern including number of holes, burden, spacing, decks, and delay pattern; diameter and depth of holes; types of explosives used; total weight of explosives used per hole; the maximum weight of explosives detonated in an eight-millisecond period; initiation system; type and length of stemming; and, mats or other protection used.

If required, the record of seismographic and airblast information will include: type of instrument, sensitivity, and calibration signal or certification of annual calibration; exact location of instrument and the date, time, and distance from the blast; name of the person and firm taking the reading, name of the person and firm analyzing the seismographic record; the vibration and/or airblast level recorded; and, the reasons and conditions for each unscheduled blast.

#### **524.800.**

Lodestar will comply with all appropriate Utah and federal laws and regulations in the use of explosives. The storage of the ammonium nitrate, blasting caps and boosters will be in temporary and portable structures designed to meet the Federal Explosives Laws for storage. The potential sites for these temporary structures are included on maps R645-301-521.150 Sheets 1, 2, 3 and 4b of 4.

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#### **525. THROUGH 525.300. SUBSIDENCE.**

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It is the desire and intent of this section to summarize issues related to subsidence as required under the regulations. In order to accomplish this, the majority of subsidence issues as they pertain to control and monitoring are outlined and discussed within this section. Subsidence related issues dealing with the effects of subsidence are found within Section 728 along with the discussion of probable hydrologic consequences. Other minor references to subsidence found throughout the permit are discussed briefly at the point of reference, however, where possible, the major discussion dealing with the issue has been condensed within

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either Section 525 or within Appendix 724.600. The following reference guide has been prepared to document which sections of the permit contain the specifics of subsidence.

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**TABLE 525a.  
SUBSIDENCE REFERENCE GUIDE.**

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<b>REFERENCED SECTION</b>	<b>SECTION CONTENT</b>
222 through 223	Soils Presubsidence Survey
321	Vegetation Presubsidence Survey
322	Fish and Wildlife Presubsidence Survey
521.142	Subsidence Mining Methods
522 through 523	Coal Recovery and Mining Methods
525	Control, Monitoring, & Mitigation Plan
728	Probable Hydrologic Consequences

### **SUBSIDENCE CONTROL PLAN**

The forest land is classed as a renewable resource, and as such, will be afforded subsidence protection as outlined within this permit in order to ensure future productivity of the forest and at the same time maximize the use of the natural coal resources of the area as required under 522. Steps being taken by Lodestar to maximize this resource while controlling the limits and effects of subsidence include the following:

- Lodestar coal recovery operations currently utilize the "Room and Pillar" method of mining. This mining method has historically been the method showing the least amount of overall subsidence to surface features, and as discussed under regulation 525.210, Lodestar has opted not to adopt other methods of mining at this point in time in lieu of the "Room and Pillar" method.
- Mining within the Lodestar permit area is conducted in a manner to attempt to follow the overall mining projections shown on mining maps contained within the permit. The extent of mining is controlled by faulting and by the angle of draw from identified surface features such as existing gas lines, etc.. The approved MMS plan calls for an angle-of-draw of 35 degrees for limited extraction. If at any future time monitoring indicates a different angle-of-draw, the plan will be modified.
- As per the report entitled "Subsidence Potential over Two-Seam Developments" prepared in March 1991 by Kenneth C. Ko & Associates, Inc., Lodestar has the intention of maintaining a standard overburden of at least 200 feet. This overburden was identified as the minimum amount required to protect against "Plug" type subsidence under full seam recovery.
- A buffer zone of at least 150 feet is left around natural gas wells located within the mine area. According to information obtained from consultants and our understanding of local angle of draw characteristics, subsidence should not damage the wells.

The Subsidence Base Maps 728.100a and 728.100b show angle of draw, survey monument information, gas line locations, power lines and other pertinent surface features related to subsidence. Plates 5-1A and 5-1B identify the location of the subsidence monitoring points to be associated with the 1999 Lease Modification area (Section 10). The monitoring points will be surveyed/installed (rebar marker only) during the winter of 2000 and will be surveyed/installed (rebar marker set in concrete) again during the Spring/Summer of 2000. Refer to Section 525 for additional monitoring information. According to the joint decision document from the BLM and Forest Service the proposed mine plan "will not cause surface disturbance, including subsidence". A copy of the Joint Decision Memo is located in Attachment A of Section 10. Refer to Section 521.142 for additional discussion.

In 1987, the Manti-Lasal National Forest USDA withdrew from the subsidence monitoring program, and in 1988 Lodestar committed to conduct annual aerial surveys in an effort to monitor subsidence. In response to that commitment, both the aerial survey and the pedestrian survey were completed during the summer of 1988 and 1989. The aerial surveys completed proved unable to produce data which could be utilized for the construction of a Subsidence Map because of heavy forestation which is characteristic of currently subsided areas. The pedestrian survey, in coordination with a differential level survey of subsided areas utilizing rebar monuments, has proved to be the most reliable source for the identification of surface disturbance. The pedestrian survey have been conducted annually since 1982 by Hansen, Allen & Luce, Inc. and the controlled survey has been completed by Bruce T. S. Ware. Data recorded as part of these surveys is documented on Maps 728.100a and 728.100b.

As part of the monitoring plan the following conditions will be met by Lodestar:

- One copy of the Subsidence Map and data will be submitted to the Division each year. The subsidence map and data will be part of the annual subsidence report which will be prepared and submitted to the Division within the first quarter of the following year.
- The Subsidence Monitoring Plan will continue for at least five years following reclamation of the mined area. Concurrence of all involved parties would be necessary for any additional annual monitoring for subsidence.

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### **SUBSIDENCE MITIGATION PLAN**

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It is understood and expected that some subsidence will occur within the Lodestar permit area as has occurred historically. Continued monitoring of subsidence as described in the preceding section will verify that subsidence is occurring as planned, and within the areas designated on Map 728.100a. Should monitoring discover that subsidence has occurred, the following steps to mitigation will be implemented.

- Should material damage be incurred to the natural gas pipelines located within the permit area, despite the approved subsidence damage prevention measures, will be either 1) to repair the damage to the pipelines caused by subsidence from the applicant's mining activities, or 2) to compensate the owner of the pipeline for such damage according to the value of the damaged section of the pipeline at the time that damages occurred.
- Any roads within the mine permit area which are materially damaged by subsidence will be repaired and re-graded to restore them to pre-subsidence usefulness.
- The operator will restore to the extent physically and economically feasible the original stream channels of intermittent and perennial streams within the permit area that may be disturbed by underground coal mining activities, including surface subsidence effects.

- Water resources impacted by subsidence will be mitigated according to the plan included within Section 728 including the following actions.
  1. Private contractors living within the district could be retained to haul water to specific locations from applicant owned sources within Pleasant Valley.
  2. The affected water right could be purchased by the applicant.
  3. The applicant has two wells within the Mine Permit Area which could be utilized to supply supplemental amounts of water for both private or industrial use.
  4. The applicant could initiate an exchange of water right with the State Engineer to exchange water owned by the applicant in Scofield Reservoir for water currently found at any one of the other 71 springs found within or adjacent to the Mine Permit Area for which water rights have not been filed. This option would in most cases be acceptable to the State Engineer if it could be shown that the spring upon which water is being filed is not critical to downstream rights between the spring and Scofield Reservoir.

## 526. MINE FACILITIES.

All structures are in compliance with the requirements of R645-301, and the designs and any modifications to the structures were accomplished with in a professional manner.

For the underground mining activity, the mine structures and supporting facilities are shown on Maps 521.150 "As Built" 100 Scale Maps, Sheet 1 through Sheet 4.

NUMBER	NAME	DESCRIPTION
<b>Location: Valcam Loadout Facility</b>		
S-1	Valcam Wellhouse 1974	Wooden structure housing the well and pump and controls
S-1A	Storage Shed 1974	Wooden structure, metal siding and roof
S-1B	Storage Shed 1974	Wooden structure, metal siding and roof
S-2	Valcam Shop 1974	Wooden structure, metal siding and roof, and concrete floor
S-3	Valcam Shop 1974	High Voltage transformers and disconnects
S-4	Valcam Bathhouse/Office 1974	Adjoining Trailers
S-5	Western Coal Carriers Shop 1983	Metal building, concrete floor
S-6	Tin Shed 1974	Wooden structure
S-7	Oil Storage Shed 1974	Wooden structure
S-8	Water Tank 1974	Metal tank

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NUMBER	NAME	DESCRIPTION
S-9	Truck Scale 1983	Concrete housing, trailer
S-10	Truck Dump 1978	Concrete and steel structure
S-11	Conveyor 1975	Steel structure, concrete base
S-12	Transfer Building 1975	Steel structure, concrete floor
S-13	Valcam Firehouse 1975	Wooden structure
S-14	Conveyor 1975	Steel structure, concrete base
S-15	Crusher Building 1975	Steel structure, concrete floor, concrete footer
S-16	Conveyor 1975	Steel structure, concrete base
S-17	Stacking Tube 1975	Concrete cylinder
S-18	Reclaim Tunnel 1975	Concrete
S-19	Reclaim Conveyor 1975	Steel structure, concrete base
S-20	Valcam Loadout Sub-Station 1975	High Voltage transformers, and disconnects.
S-21	Valcam Loadout 1975	Steel structure, concrete base
<b>Location: General Office Area</b>		
S-22	Valley Camp Office 1976	Wooden structure, concrete floor (removed 1994)
S-23	Office Firehouse 1976	Wooden structure
<b>Location: Belina Mine Site</b>		
S-24	Oil Storage Shed 1983	Wooden structure
S-25	Wastewater Plant 1980	Metal structure, concrete stem walls, concrete floor, prefab concrete walls, concrete footers
S-26	Belina Wellhouse 1980	Wooden structure
S-27	Belina Mines Bathhouse/Office Complex 1980	Metal structure, concrete stem walls, concrete floor, prefab concrete walls
S-28	Belina Shop 1976	Metal structure, concrete floor, concrete footers
S-29	Garage (portable) 1989	Metal structure
S-30	Pumphouse 1976	Concrete block, concrete floor, concrete footers
S-31	Washbay 1986	Metal structure, concrete floor
S-32	Reclaim Belt and Truck Bin 1980	Steel structure, concrete base
S-33	Belina Truck Loadout 1980	Metal structure, concrete floor, concrete footers

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NUMBER	NAME	DESCRIPTION
S-34	Belina Loadout Sub-Station 1980	High Voltage transformers and disconnects, concrete retaining wall
S-35	Belina No. 1 Conveyor Gallery 1980	Steel structure, concrete base, concrete stem walls, concrete floor (removed 1999)
S-36	Stacking Tube 1980	Steel structure
S-37	Reclaim Tunnel 1980	Concrete, concrete floor, aluminum
S-38	Belina No. 2 HAC 1990	Steel structure, concrete base
S-39	Belina No. 2 Conveyor 1980	Steel structure, concrete base
S-40	Transfer Building 1980	Steel structure, concrete stem walls, concrete floor
S-41	Belina No. 1 Fan 1977	8 HU Jeffery Fan, prefab concrete, concrete footers, concrete floor (removed 1999)
S-42	Belina No. 2 Fan 1980	8 HU Jeffery Fan, prefab concrete, concrete footers, concrete floor
S-43	Filter Pond 005A 1980	Concrete structure
S-44	Belina Mines Sub-station 1975	High Voltage transformers and disconnects

The mine structures and supporting facilities "As-built" details are shown on the Lodestar disturbed area 50 scale contour base Maps and are found as the 527 series maps found in the MRP. Maps included in the MRP are listed below.

At the start of surface mining the following facilities will not have been removed at the White Oak Complex: S-26 Wellhouse, S-32 Truck Bin and conveyor, S-33 Truck Loadout Control building, S-34 Truck Loadout substation, S-35 Conveyor No. 1 and transfer, S-36 Stacking tube, and S-37 Reclaim Tunnel. A 305,049 LCY temporary spoil storage pile will be created in the first three months of operation of the surface mine.

#### **Valcam Loadout Facility**

##### **Map 500. Map Index**

**MAP 527. Valcam Loadout Facility Reclamation - Sheet 1**

**MAP 527. Valcam Loadout Facility Reclamation - Sheet 2**

**MAP 527. Valcam Loadout Facility Reclamation - Sheet 3**

#### **General Office Area**

**MAP 527. General Office Area Reclamation - Sheet 4**

#### **Belina Haul Road**

**MAP 527. Belina Haul Road Reclamation - Sheet 5**

**MAP 527. Belina Haul Road Reclamation - Sheet 6**

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**MAP 527. Belina Haul Road Reclamation - Sheet 7**  
**MAP 527. Belina Haul Road Reclamation - Sheet 8**  
**MAP 527. Belina Haul Road Reclamation - Sheet 9**  
**MAP 527. Belina Haul Road Reclamation - Sheet 10**  
**MAP 527. Belina Haul Road Reclamation - Sheet 11**

**Belina Mine Site**

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**MAP 527. Belina Mine Site Initial Reclamation - Sheet 12**  
**MAP 527. Belina Mine Site Final Reclamation - Sheet 13**

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Reclamation channel design details are shown on Maps 527 Sheets 15 and 16. The mine structure, surface facilities are depicted on the above mentioned maps. Nomenclature symbols for constructed features shown on the mapping includes a "C" for culvert, a "D" for runoff control ditch and an "S" for a structure.

**MAP 527. Reclamation Channel Details - Sheet 15**  
**MAP 527. Reclamation Channel Details - Sheet 16**

At this time only one modification has taken place, it being an upgrade to the truck/train loadout belt conveyor. No new disturbance to the present area was required, as the new drive unit is directly under the existing belt conveyor, where approximately 30 cu. yds. of concrete were placed to mount the drive unit. The old feeders have been replaced with cone feeders to enhance the live storage of the Valcam coal stockpile. This upgrade will allow Lodestar to load a unit train in just under two hours, as stipulated in the new coal contract.

**526.100. MINE STRUCTURES AND FACILITIES.**

Those existing facilities traversing through the Mine Permit Area are Questar Pipeline Company pipe lines and UP&L transmission lines which are depicted the Subsidence Base Map and the Valcam Loadout Facility Map. Those facilities that are within the 100 feet of a public road were subject to public comment during the initial permit approval process. No public road was or will be relocated in conjunction with mining and reclamation activities.

**526.200. UTILITY INSTALLATION AND SUPPORT FACILITIES.**

All utility installations associated with Lodestar coal mining and reclamation operations will be conducted in a manner which minimizes damage, destruction, or disruption of services provided by oil, gas, and water wells; oil, gas, and coal-slurry pipelines, railroads; electric and telephone lines; and water and sewage lines which pass over, under, or through the Mine Permit Area, unless otherwise approved by the owner of those facilities and the Division.

**526.220. THROUGH 526.222.**

The support facilities are and will continue to be operated in accordance with a permit issued for the mine or coal preparation plant to which it is incident or from which its operation results.

The support facilities are located, maintained, and used in a manner that prevent or control erosion and siltation, water pollution, and damage to public or private property; and to the extent possible using the best technology currently available to minimize damage to fish, wildlife, and related environmental values; and minimize additional contributions of suspended solids to stream flow or runoff outside the Mine Permit Area.

## **526.300. WATER POLLUTION CONTROL FACILITIES.**

There are three sedimentation ponds (001A, 002A, and 003A) at the Valcam Loadout Facility and one (004A) at the Belina Mine Site. All were constructed on parallel lifts and meet OSM requirements. Also at the Belina Mine Site is a concrete filter pond (005A). An incised pond Dugout D-1 will be installed prior to the start of surface mining in the month 2 projections. This pond will become part of the pit as mining progresses through the area and will be reinstalled in the pit floor once the coal has been removed and the mining passes. The concrete filter pond (005A) will be removed at the start of the surface mining phase of recovering the barrier coal. All sed-ponds are used to protect the quality of surface water run-off and the filter pond was used to insure the quality of the mine water discharge, all of which are maintained by the mine personnel. In addition to normal maintenance, any pond will be cleaned in which the sediment capacity is reduced by 60 percent. The sedimentation ponds within the Mine Permit Area will be removed and reclaimed at the end of the reclamation.

There will be an overburden stockpile associated with the surface mining of the barrier coal. This stockpile will be located in front of the access portals to the White Oak (Belina) No. 2 Mine and on a majority of the coal stockpile area and truck turn-around. Also, the earth material removed during the construction of the benches for the Belina No. 1 Mine pad was used to construct the Belina No. 2 Mine pad area.

## **526.400. AIR POLLUTION CONTROL FACILITIES.**

## **527. TRANSPORTATION FACILITIES.**

### **527.100. THROUGH 527.240.**

All roads in the Mine Permit Area have been classified as primary according to DOGM, however, the Truck/Train-Truck Dump Road (Primary Road No. 1) at the Valcam Loadout Facility and the Belina Haul Road (Primary Road No.1) are the only roads which are considered as improved road, both are overlayed with asphalt concrete and are shown on their respective area "As-Built" 100 Scale 521.124 Maps, Sheets 1-4 respectively, also shown are all transportation facilities including rail, and conveyors.

The design and construction of roads within the permit area were made in such a manner as to protect the environment and minimize the impact on fish and wildlife by constructing fish ladders on Eccles Creek, improve haul roads with asphalt concrete, concrete ditch and culvert design, and by designing culverts drainages crossings with capacities match the immediate upstream and downstream conditions of the natural drainages.

Outlying roads are maintained annually, usually during late spring or early summer while there is still adequate moisture in the soils to promote compaction. The Belina Haul Road and the Truck/Train-Truck Dump Roads are maintained on an as needed basis. The concrete ditch is cleaned between major storms, chuckholes are repaired and Asphalt Concrete overlays are installed when the surface merits rehab.

Should the roads be damaged by a catastrophic event, such as an earthquake or a flood, repairs will be made as soon as possible. The Morrison-Knudsen Report (Appendix 527) includes the geotechnical analysis of the Belina Haul Road. For specific reclamation work see the "Reclamation Plan" portion of the permit submittal.

The roads constructed within the surface mining area are to access the pits, bench roads to move the drill and internal roads between pits in the barrier recovery/reclamation phase are considered to be part of the pit due to their short term use. These accesses are not designed nor engineered. They are not permanent features. The drainage around the pits and roads within the pits will report to the active pit. However, these accesses will be graded and rocked as necessary to maintain access.

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## **528. HANDLING AND DISPOSAL OF COAL, OVERBURDEN, EXCESS SPOIL AND COAL MINE WASTE.**

After coal is cut from the underground mine face, it is transported to the surface via a beltline, placed upon the raw coal storage pad at the Belina Mine Site where it is then loaded into belly-dump (double) coal trucks and transported to the Valcam Loadout Facility coal storage pad. From that point it is either shipped by rubber or rail to the customer. See Section 520. Upon the completion of the underground mining operations, the remaining barrier coal around the underground portals will be recovered using the contour method of surface mining at the White Oak (Belina) Mine site.

The removal of the overburden and interburden material around the outcrop of the Upper and Lower O'Connor coal seams will be necessary to remove the coal seams in the barrier between the surface and the underground workings. The rock material will be drilled and blasted. The initial cuts will have the overburden pushed mainly by dozers into the area that was the location of the coal storage pile and the truck loadout loop. This material will be used to fill the final pit. After the initial pit is opened, the coal will be removed using front end loaders. The coal will be loaded into tandem belly-dump coal trucks using wheel loaders and transported to the Valcam Loadout Facility coal storage pad. From that point it is either shipped by truck or rail to the customer. Each subsequent pit created will be drilled and blasted first and the blasted material will be pushed into the adjacent pit after the coal has been removed.

The two seam sequence will not start until the lower seam is advanced far enough ahead of the upper seam so that the overburden from the upper seam can be drilled and blasted then pushed onto the material in the old lower seam pits. Once the initial pit is complete in the upper seam, the material from the next upper seam pit will be pushed into the adjacent upper seam pit after the coal has been removed. Overburden material will only be trucked when the distance to push the material becomes too great and when additional material needs to be placed to complete the rough grading process.

At the time final reclamation of the Mine Permit Area occurs, the coal and coal fines which are considered unsaleable (stockpile bases and short term coal storage area bases, roadways, etc.) after the marketable coal has been shipped, will be placed in a controlled manner to ensure stability and to prevent combustion, movement and environmental degradation after reclamation. This coal will be covered with a minimum of four feet of non-toxic material.

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### **528.200. OVERBURDEN.**

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During the actual faceup and mine pad construction, outcrop coal was harvested and shipped to the customer. The coal not harvested was incidental to exposing the coal seam itself and the barrier coal. Some coal which became intermingled with the down-cast "overburden" should not create a problem in the future as that material became a composite blend through the handling process of the site construction.

The initial interburden from the Lower O'Connor seam will be stored adjacent to the White Oak (Belina) No. 2 mine portals and on the coal stockpile pad until the completion of the barrier coal recovery. This overburden material will then be trucked to supplement areas of material shortage and to the final pit to complete the reclamation of the portal side of the mine site.

### **528.300. SPOIL, COAL PROCESSING WASTE, MINE DEVELOPMENT WASTE, AND NON-COAL WASTE REMOVAL, HANDLING, STORAGE, TRANSPORTATION, AND DISPOSAL AREAS AND STRUCTURES.**

**Excess Spoil.** As per the UDOGM definition, there are no Excess Spoil disposal areas within the Mine Permit Area. However, should it become necessary to create a waste disposal area, it will be accomplished in accordance with the requirements of the regulations, and other federal, state and local regulations.

**Coal Mine Waste.** There is no coal mine waste as per UDOGM definition. No coal mine waste will be disposed of except in an area approved by the Division. There are no coal processing facilities within the permit area and therefore no coal processing waste will be returned to the underground mine workings.

**Refuse Piles.** There is no large quantities of refuse materials generated within the Mine Permit Area as the only sources of refuse or coal waste materials are associated with the loadout and transportation facilities. This "refuse or waste" for the most part is fines which are returned to the raw coal pile at the Belina Mine Site or the coal pile at the Valcam Loadout Facility. There are no Refuse Piles as per UDOGM definition.

Any unsuitable materials encountered during reclamation will be placed in accordance with the Reclamation Plan which specifically addresses the regulations.

**Burning and Burned Waste Utilization.** All fires (intentional or unintentional) are extinguished in accordance with MSHA Regulations by personnel specifically trained in fighting fires. These people are trained according to an MSHA approved fire fighting plan.

Coal mine waste fires are extinguished in accordance with a plan approved by MSHA and the Division.

Coal stockpile fires are extinguished as quickly as possible, the hot spots are removed from the stockpile, spread out and cooled with water and the coal is promptly returned to the stockpile.

**Non-coal Mine Waste.** There are no Non-coal Mine Waste disposal site within the Mine Permit Area. The Non-coal Mine Waste is stored in metal hoppers prior to being transported to the Carbon County Landfill. The hoppers are covered while in transit. No Non-coal mine waste will be deposited in a refuse pile or impounding structure nor will there be an excavation for a non-coal mine waste disposal site closer than eight feet of any coal outcrop or coal storage area.

**Underground Development Waste.** There is no underground development waste sent out of the mines operated at Lodestar Energy, Inc..

## **529. MANAGEMENT OF MINE OPENINGS.**

### **529.100. EXPOSED UNDERGROUND OPENINGS.**

The process of recovering the barrier coal during the surface mining process will uncover parts of the underground mine workings. The openings that are not filled with broken rock material as a result of the blasting process will have overburden material pushed into the opening to control access and water flow.

### **529.200. TEMPORARY SEALING OF MINE OPENINGS.**

Any mine opening which is temporarily inactive will be properly guarded as per MSHA Statutory Provisions of the 30 CFR Chapter 1, Subpart R-Miscellaneous, 75.1701 Abandoned areas, adjacent mines; drilling of boreholes, or sealing of mines.

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## **530. OPERATIONAL DESIGN CRITERIA AND PLANS.**

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### **531. GENERAL.**

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"As-Built" design drawings for all sediment ponds 001A-Dugout D-1, the filter pond 005A, none of which are above any old or new mine workings are found and discussed within Hydrology Sections 733.130 and 742.221.

## **532. SEDIMENT CONTROL.**

Sediment control measures are described in sections 732 and 742 of the permit.

### **532.100. DISTURBED AREA.**

The smallest practical area will be disturbed at any one time during the mining operation and reclamation phases of the Mine Permit Area. This will occur through progressive backfilling, grading and prompt revegetation as required during the underground phase of this permit.

During the surface mining phase of the barrier coal removal, a variance is requested for the following reasons. The tight area of this operation and the short duration of the project will not allow for the smallest area possible to be disturbed. Access roadways to pits and equipment movement will prevent final grading to be completed in all areas behind the active pit. Pits will be backfilled progressively and rough grading will occur, however final grading may lag further behind. The design for the sediment control structures is to facilitate the entire area of the surface mining to be disturbed before being revegetated. However, as sediment control and to reduce the area of disturbance, the temporary spoil storage pile will have interim seeding with a seed mix consisting of barley applied at the rate of 100 PLS pounds live seed per acre that will be hand broadcast on the slopes and inactive areas of the pile. Interim seeding of the rough graded spoil with a seed mix consisting of barley applied at the rate of 100 PLS pounds live seed per acre that will be hand broadcast on the rough slopes that are not protected by snow cover and will not be receiving topsoil within the next three months. This seeding will occur after the rough grading is completed in an area.

### **532.200. BACKFILL STABILIZATION.**

The backfill operation will stabilize the material used to promote a reduction of the rate and volume of runoff in accordance with the requirements of the rules cited within this section. Regrading existing slopes will be such as to achieve stability, permanent features to enhance reclamation, installation of grade breaks on slopes, regrading to achieve the approximate original contours, highwall elimination, minimize erosion and water pollution, spoil handling, and preparation of the final graded surfaces for replacement of the Vegetation-Supporting Material. Stability analysis on the regraded slopes is found in Appendix R-2.

### **533. THROUGH 533.700. IMPOUNDMENTS, STABILITY, FOUNDATIONS, SLOPE AND EMBANKMENT PROTECTION, HIGHWALL LOCATION, MSHA AND NON-MSHA IMPOUNDMENTS.**

For details see the following references in the permit: Impoundments - 733, Stability, Foundations, Slope and Embankment Protection, and Highway Location - 742.221, and MSHA and Non-MSHA Impoundments - 742.222.

### **533.500 RELATIONSHIP BETWEEN PONDS AND HIGHWALL REMNANTS**

Dugout D-1 pond will be installed prior to the second month of surface mining. The pond will be incised. The highwall of the active pit will be no closer than 50 feet. As the active pit passes through the pond, the pit will serve as the pond until the coal is removed and the pond is reinstalled as an incised pond in the floor of the pit. The remnant highwall of the pit will be greater than 50 feet away from the pond to allow for safe access to the pond for sampling and inspection.

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## **534. ROADS.**

### **534.100. LOCATION, DESIGN, CONSTRUCTION, MAINTENANCE AND RECLAMATION.**

All roads are shown on Maps 521.124 Sheet 1 through Sheet 4.

The MK report Appendix 527 exhibits non-compliance for the Belina Haul Road which constituted need for a Division "administration variance" (Final Approval Letter, March 14, 1989, originator Ms. Susan C. Linner, UDOGM, Reclamation Biologist/Permit Supervisor) requiring Visual Movement Indicators (VMI's). The VMIS (installed October 1987) are located in the potentially "unstable" areas of the road, and are monitored during high precipitation cycles. There are 19 Visual Movement Indicator lines along the Belina Haul Road, these lines are mine roof bolts in line, driven to a supportive depth, approximately 25 feet apart, from the edge of the outslope to below the fill area of the outslope. The hub point of each line is shown on the Belina Haul Road Map 521.124., Sheet 2 and 3.

All roads within the Mine Permit Area are routinely inspected and maintained by a full time contractor. For the most part, the Belina Haul Road is traveled by the contractor on a daily basis, any abnormalities are reported to Lodestar personnel and corrective actions taken. There has been no significant movement as can be verified by the asphalt concrete surface of the Belina Haul Road. Should significant movement occur, the Division will be notified immediately and a summary of the inspection and corrective measures taken will be included in the annual report submitted to UDOGM. Signs are posted warning the employees and the public of the potential hazards of the road, along with the standard regulatory sign required on public roads.

Refer back to 527 for a complete description of the roads within the Mine Permit Area. Also refer to Morrison-Knudsen Report found in Appendix 527.

If the Belina Haul Road were to be put back to the Original Contour, it would not be stable as described in the stability analysis found in the M-K Report. The Belina Haul Road was pioneered in 1975-76 and widened in 1977 has had two slides below the fill lines of the constructed toe, an earthquake and two years of +200 percent of normal precipitation. Lodestar believes the Haul Road exhibits stability.

The Belina Haul Road will be reclaimed to a condition of stability commensurate with the surrounding slopes and should not be any more susceptible to failure than any other slopes within the adjacent area.

### **534.200.**

The outlying roads within the Mine Permit Area are limited use roads, portions of which are roads which were built prior to the Valley Camp operation. Those roads include the Boardinghouse Canyon Road, the Questar Pipeline Co. pipe line access roads and the O'Connor Mine Road. The Boardinghouse Canyon Road is an unimproved road which passes through K&H, Milton Oman, and Jack Otani properties and ties into a Questar Pipeline Co./U.S. National Forest road near the O'Connor Mine. The Questar Pipeline Co. pipe line access roads are on the top of most ridge lines within the Mine Permit Area and all these roads are unimproved. The O'Connor Road was recently reclaimed by AMR segment of UDOGM.

The roads which are within the disturbed areas of the Mine Permit Area are the Valcam Loadout Facility truck/train loop road, General Office Area Road and the Belina Haul Road. These roads are shown on the Operations Maps listed in this section. All roads will remain for the duration of the mining phase of this operation. These roads all meet the requirements of the Regulations. The road surface is constructed of asphalt concrete and the culverts are CMP and were designed using ASTM standards, installed in accordance with UDOT Standard Specifications by General Coal Contractors, Helper, Utah and the placement was

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monitored by Centennial Engineering Inc., SLC, Utah, and having no failures as of December 1992, Lodestar can only assume the culverts were designed and installed correctly.

The Belina Haul Road utilizes a concrete ditch with grated drop inlets and sediment traps. The primary use of these roads are for personnel access and the transportation of coal from the mine to the shipping point at the Valcam Loadout Facility. As shown on the Reclamation Maps, the railroad access road at the Valcam Loadout Facility will remain, the General Office Area Road will remain, while the Belina Haul Road will be reclaimed.

## **535. SPOIL.**

### **535.100. DISPOSAL OF EXCESS SPOIL.**

A disposal site is permitted at the White Oak Complex. The details of this site are contained in Section 9. This site will be absorbed into the surface mining of the barrier coal at the White Oak Complex and will become part of the reclamation that will be associated with that project. The fill and appurtenant structures are designed using current, prudent engineering practices and will meet any design criteria established by the Division.

### **535.110.**

The Excess Spoil fill will meet the requirements of 535.111 through 535.130.

## **536. COAL MINE WASTE.**

No coal mine waste (as Defined in R645-100-200) has been generated to necessitate a disposal site for coal mine waste. Should it become necessary to construct such a disposal site during the operation phase, it will be accomplished through the approval process.

### **536.100. DISPOSAL FACILITIES.**

Should a disposal facility be needed during the reclamation phase, it will be designed using current prudent engineering practices and will meet design criteria established by the Division. Actual location for this type of facility will be done during reclamation so to insure the most advantageous location can be utilized, with respect to AOC concerns, stability of existing foundations and or abutments, weak zones or groundwater effects upon the facility. The estimated amount of material which may require disposal can be found in 800.

### **536.200. COAL MINE WASTE PLACEMENT.**

If a waste disposal facility becomes necessary, MSHA regulations which are applicable will be complied with. Mass stability will be paramount in the concerns of this type of facility.

### **536.300. COAL MINE WASTE DISPOSED OF IN EXCESS SPOIL FILLS.**

There are no new or existing spoil fills within the Mine Permit Area, consequently, no coal mine waste will be disposed on or in excess spoil fills.

### **536.400. NEW AND EXISTING IMPOUNDING STRUCTURES CONSTRUCTED OF COAL MINE WASTE OR INTENDED TO IMPOUND COAL MINE WASTE.**

There are no new or existing impounding structures which are constructed of coal mine waste and coal mine waste will not be used for construction of impounding structures.

**INCORPORATED**

500-33

**OCT 26 2001**

Revised: October 2001

**DIV OF OIL GAS & MINING**

### **536.500. DISPOSAL OF COAL MINE WASTE IN SPECIAL AREAS.**

No coal mine waste materials from activities located outside the Mine Permit Area will be disposed of in the Mine Permit Area.

### **UNDERGROUND DISPOSAL**

Any underground disposal of coal mine waste returned to the underground will be done in accordance with a plan approved by MSHA and the Division.

### **536.600. UNDERGROUND DEVELOPMENT WASTE.**

Should coal mine waste be generated, it will be placed in such a manner as to comply with the MSHA regulations and ensure mass stability, prevent mass movement during and after construction, prevent combustion and not create a public hazard.

### **536.700. COAL PROCESSING WASTE.**

There is no coal processing waste generated by this mining and reclamation operation, consequently, there are no plans for returning coal processing waste to the underground workings.

### **536.800. COAL PROCESSING WASTE BANKS, DAMS AND EMBANKMENTS.**

No coal processing waste banks, dams or embankments exist within the Mine Permit Area.

### **536.900. REFUSE PILES.**

No refuse piles exist within the Mine Permit Area.

### **537. REGRADED SLOPES.**

All previously disturbed slopes which require regrading will be accomplished in accordance with the requirements of this section, unless otherwise approved by the Division.

### **537.100. GEOTECHNICAL ANALYSIS.**

Slope stability analysis for the surface mining reclamation grades and the temporary spoil storage area are provided in Appendix R2.

### **537.200. REGRADING OF SETTLED AND REVEGETATED FILLS TO ACHIEVE APPROXIMATE ORIGINAL CONTOUR.**

Areas which might fall into this category are depicted on Map 521.150 Sheets 1 through 4, showing the cuts and fills that are revegetating naturally. The Belina Haul Road is comprised of in-place materials and is for the most part, built on cut not fill. Several slope areas on the Belina Haul Road have deciduous and conifer growing adjacent to the concrete lined ditch and shoulder of the road. All disturbed area will be evaluated before any reclamation begins to verify areas which redisturbance would be unrealistic.

There is no spoil or underground development waste associated with the Primary road system.

**INCORPORATED**

**OCT 26 2001**

**DIV OF OIL GAS & MINING**

Revised: October 2001



#### **540. RECLAMATION PLAN.**

Information related to reclamation applicable to this section has been moved to the "Reclamation Plan" volume of this permit submittal.

#### **550. RECLAMATION DESIGN CRITERIA AND PLANS.**

Information related to reclamation applicable to this section has been moved to the "Reclamation Plan" volume of this permit submittal.

#### **553. BACKFILLING AND GRADING.**

The backfilling and grading for the surface mining of barrier coal at the White Oak Complex will not be able to meet the requirements for back filling and rough grading to follow coal removal by not more than 60 days or 1500 linear feet. Therefore Lodestar Energy is requesting a variance to this regulation for the following reasons. The creation of the temporary spoil storage area will take a minimum of 90 days. This material will not be pushed entirely into the pits created to remove the coal during this period. In the fourth month, the upper seam of coal will be uncovered and the material from this pit will go to the lower bench and start the process where pit 1 can be rough graded. The confined area of this mining operation will cause adjacent areas to be used for access. Grading will be done to provide the access but the grading of spoil against the high wall may be more than 60 days behind in some areas. Grading will occur to place the temporary spoil storage material, however the letter of this regulation may not be met at all times on the 60 day requirement. See the spoil management section of the Operation Plan on page O-14.

The toxicity testing of the rock material in the overburden above the Upper O'Connor and the interburden between the Upper and Lower O'Connor seams most intervals had a high net neutralizing capacity and none of the results indicated a potential for toxic metal leachate from the waste rock. Any rock layer that does not meet the -5t/kt criteria will be mixed with more neutralizing rock material and covered with a minimum of four feet of non-toxic material. The coal seams were tested earlier and found to be non-toxic. However, the coal seams will be covered with a minimum of four feet of non-toxic material during reclamation.

The highwalls created during the installation of the White Oak Mine Complex will be redisturbed by the surface mining at the same complex. The new highwalls created by the surface mining operation will be removed by the placement and grading of the spoil material on stable slopes. Cross-sections of the surface mining area are on Maps R645-301-521.160 (Sheets a-d) in Chapter 5 and the Stability analysis of the cross-sections from Figure R-11 are included in Appendix R-2.

#### **560. PERFORMANCE STANDARDS.**

Lodestar will conduct their coal mining and reclamation operations in accordance with the approved permit and the requirements of 510 through 553.

**INCORPORATED**

**OCT 26 2001**

**DIV OF OIL GAS & MINING**

VALLEY CAMP ACT/007/001 REVISION				INCORPORATED INTO MRP BY DOGM				VALLEY CAMP ACT/007/001 REVISION				INCORPORATED INTO MRP BY DOGM				VALLEY CAMP ACT/007/001 REVISION				INCORPORATED INTO MRP BY DOGM			
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INCORPORATED  
REVISION  
DATE 6/1/89  
BY SAND DESIGN & GRAPHICS

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DIVISION OF  
OIL, GAS & MINING

**VALLEY CAMP OF UTAH, INC.**  
SCOFIELD ROUTE, HELPER, UTAH 84526

	TITLE:	Drawn by:	Date:
	R645-301-521.III.	Ed Sanderson	12/17/89
	PLEASANT VALLEY	Approval:	Date:
MINING DISTRICT	Drawing No.	Rev. 1	
	R645-301-521.III	3/93	

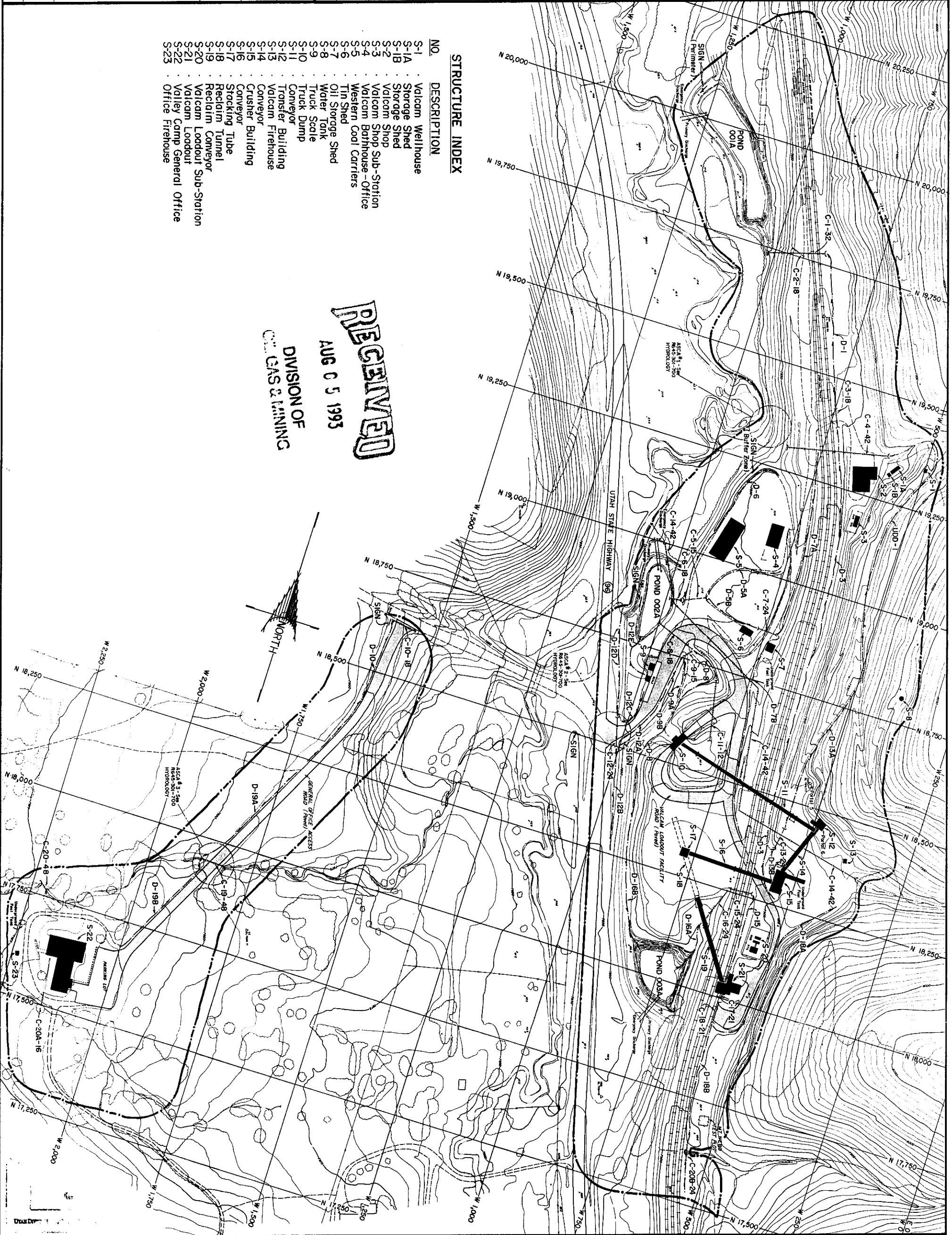
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SCALE: 1"=2000' SHEET 1 of 1





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**LEGEND:**  

S-XX

Structure

C-XX-XX

Valley Camp Roads (Paved)

D-XX

Culvert

D-XX

Ditch

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Disturbed Area Boundary

**NOTES:**  
1. For all Hydrology information and structures see HYDROLOGY SECTION (700)  
2. Disturbed Area Acres  
Valcam Loadout Facility 33.5 ac.  
General Office Area 23.0 ac.  
Lower Section Belina Haul Road 23.5 ac.  
Upper Section 23.5 ac.  
Belina Mine Site 61.0 ac.

REGISTERED PROFESSIONAL ENGINEER

No. 5323

EDWIN BROOKSHIRE

FOUST

Mar 93

STATE OF UTAH

VALLEY CAMP OF UTAH, INC.

SCOFIELD ROUTE, HELPER, UTAH 84526

TITLE:

R645-301-521.124.

VALCAM LOADOUT FACILITY

DISTURBANCE

Drawn by:

Ed Sanderson

Approval:

Drawing No.

R645-301-521.124.

Rev. /

3/93

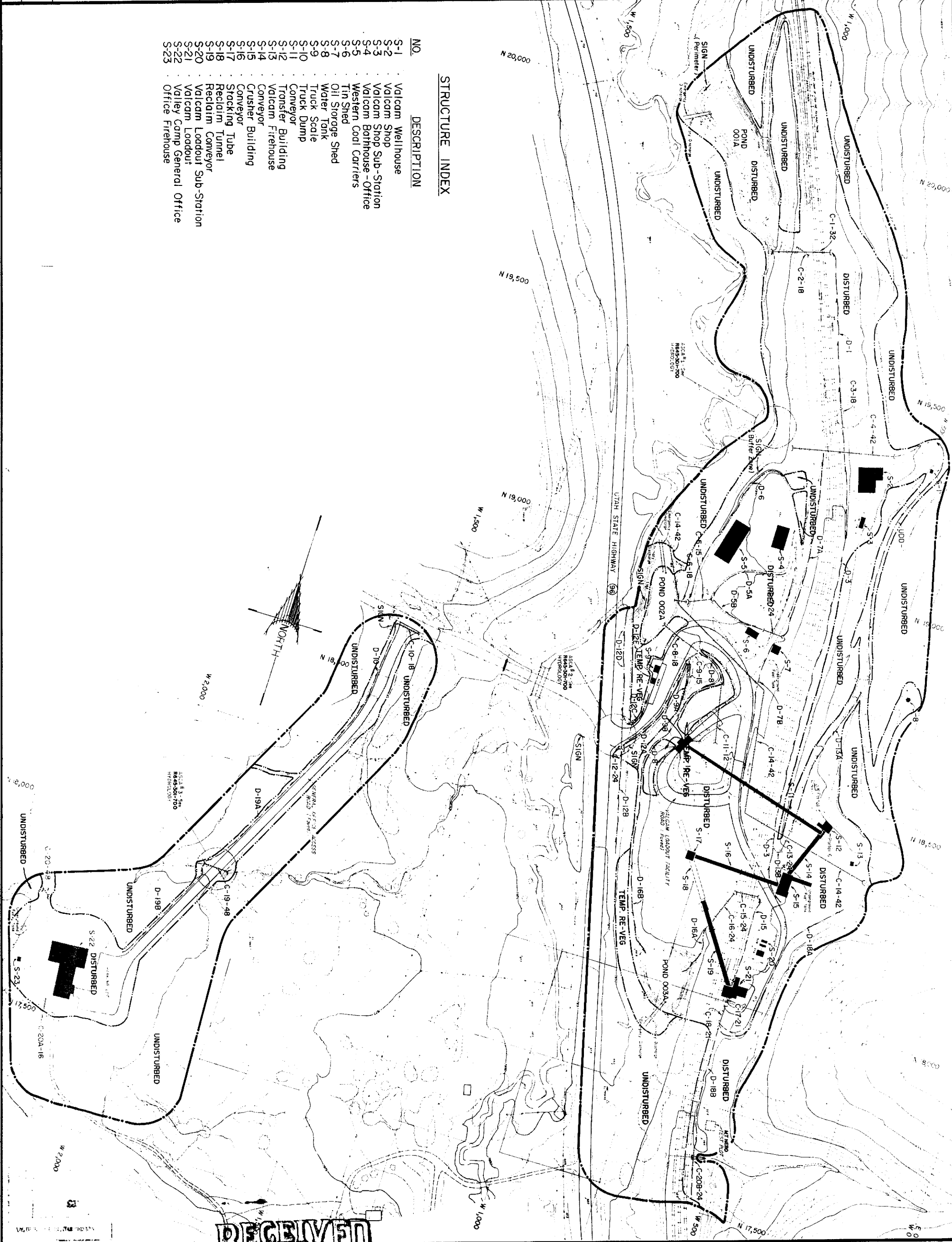
SAND DESIGN & GRAPHICS

"AS BUILT"

SCALE: 1"=100'

SHEET 1 of 4

VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM		
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1	7/29/93	TITLE CHANGE															



LEGEND:

- DISTURBED AREA BOUNDARY
- SEGMENT LINES
- GAME TRAIL

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**COAL GAS & MINING**



*John B. [Signature]*

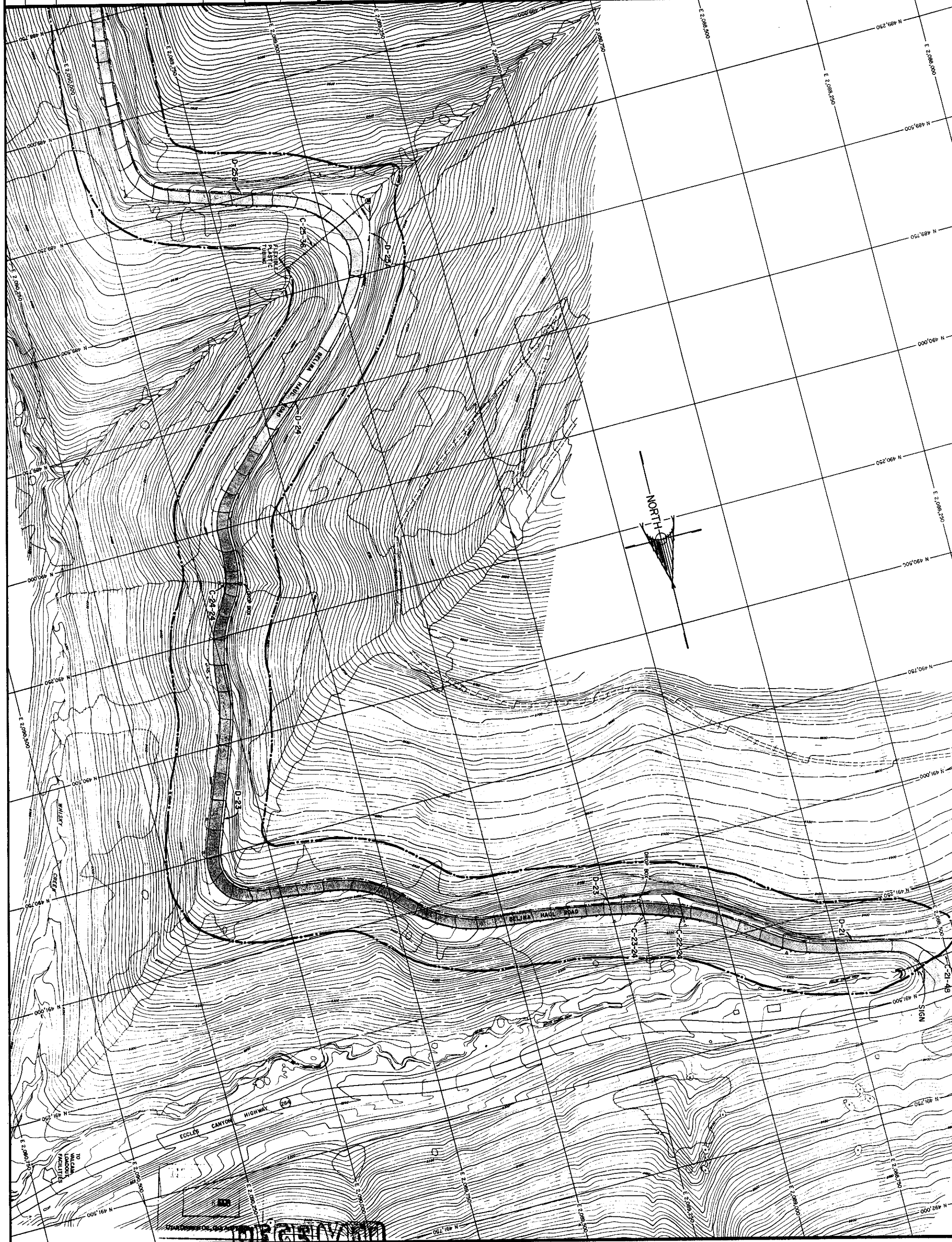
**VALLEY CAMP OF UTAH, INC.**  
SCOFIELD ROUTE, HELPER, UTAH 84526

	TITLE:	R645-301-521.150. VALCAM LOADOUT SURFACE FACILITIES	Drawn by:	Ed Sanderson	Date:	6/10/90
			Approval:		Date:	
			Drawing No.	R645-301-521.150	Rev. 1	3/93

**SAND DESIGN & GRAPHICS** "AS BUILT" SCALE: 1"=100' SHEET 1 of 4



VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM			VALLEY CAMP ACT/007/001 REVISION			INCORPORATED INTO MRP BY DOGM		
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LEGEND:  
 Note: See Sheet 1

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*Edwin Brookshire Foust*

**VALLEY CAMP OF UTAH, INC.**  
 SCOFIELD ROUTE, HELPER, UTAH 84526



TITLE:  
**R645-30I-52I.124.**  
**BELINA HAUL ROAD-LOWER**  
**SECTION DISTURBANCE**

Drawn by: **Ed Sonderson** Date: **Sept. 1990**  
 Approval: \_\_\_\_\_ Date: \_\_\_\_\_

Drawing No. **R645-30I-52I.124** Rev. 1  
 3/93

**SAND DESIGN & GRAPHICS**

**"AS BUILT"**

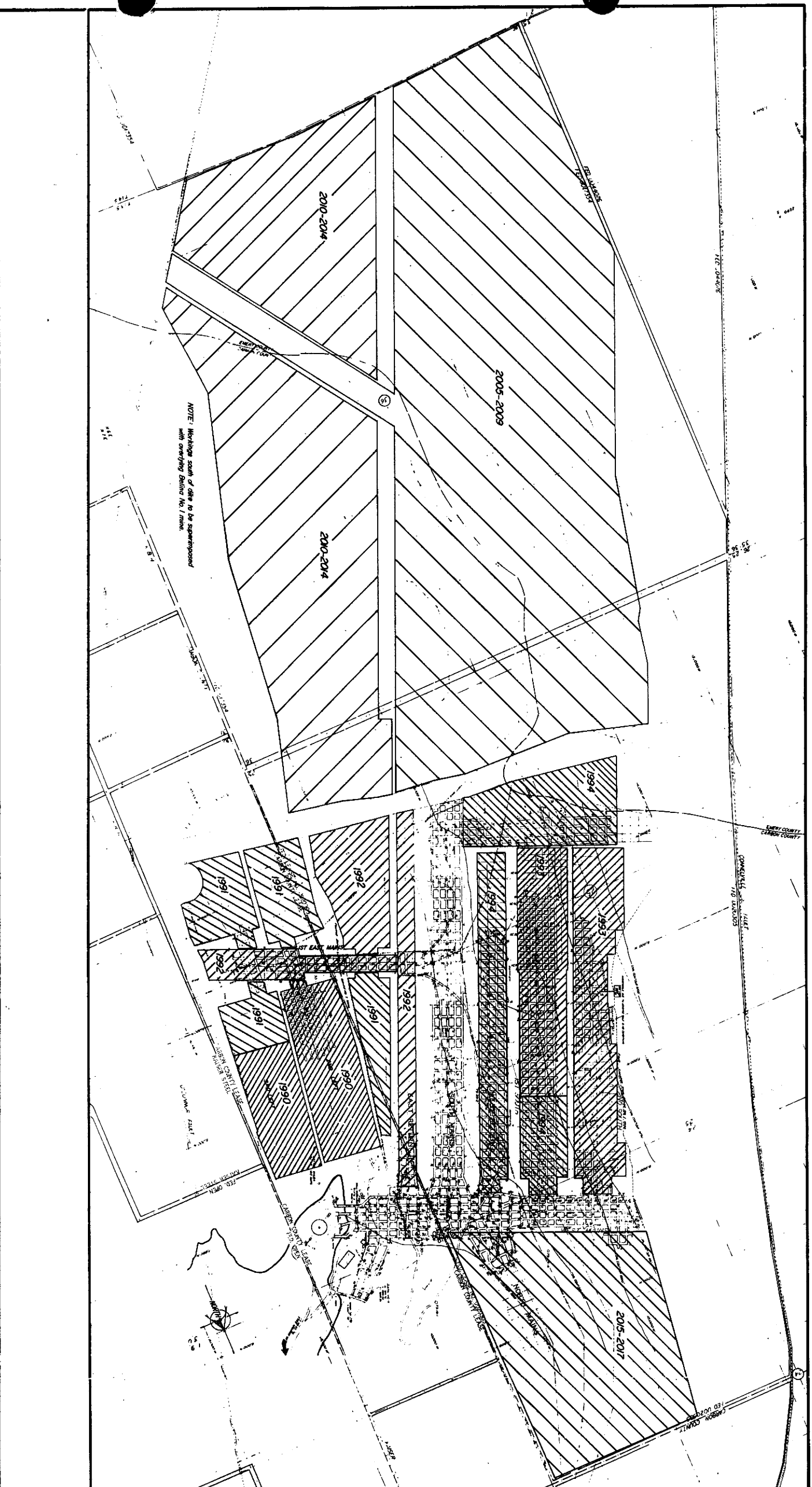
**SCALE: 1"=100'**

**SHEET 2 of 4**





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R645-301-521.141b

**LEGEND**

**SURFACE:**

- SECTION LINE
- 1/4 SECTION LINE
- SECTION CORNER
- WELL, 1/4, 1/2, 3/4, 1/8, 1/16, 1/32, 1/64, 1/128, 1/256, 1/512, 1/1024, 1/2048, 1/4096, 1/8192, 1/16384, 1/32768, 1/65536, 1/131072, 1/262144, 1/524288, 1/1048576, 1/2097152, 1/4194304, 1/8388608, 1/16777216, 1/33554432, 1/67108864, 1/134217728, 1/268435456, 1/536870912, 1/1073741824, 1/2147483648, 1/4294967296, 1/8589934592, 1/17179869184, 1/34359738368, 1/68719476736, 1/137438953472, 1/274877906944, 1/549755813888, 1/1099511627776, 1/2199023255552, 1/4398046511104, 1/8796093022208, 1/17592186044416, 1/35184372088832, 1/70368744177664, 1/140737488355328, 1/281474976710656, 1/562949953421312, 1/1125899906842624, 1/2251799813685248, 1/4503599627370496, 1/9007199254740992, 1/18014398509481984, 1/36028797018963968, 1/72057594037927936, 1/144115188075855872, 1/288230376151711744, 1/576460752303423488, 1/1152921504606846976, 1/2305843009213693952, 1/4611686018427387904, 1/9223372036854775808, 1/18446744073709551616, 1/36893488147419103232, 1/73786976294838206464, 1/147573952589676412928, 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## DIVISION OF OIL, GAS & MINING



## **APPENDIX 500**

### **EXTENSION OF CONVEYOR GALLERY NO. 2**

Lodestar Energy, Inc. is planning to disassemble Conveyor Gallery No. 1 and the High Angle Conveyor and use the parts to extend Conveyor Gallery No.2 (S-39 on Drawing No. R645-301-521.124). The purpose of this extension is to convey coal from the No. 2 Mine to the stacking tube at the White Oak Complex.

A general contractor, structural engineer, and geotechnical engineer have been working together to design the extension of the conveyor gallery. A drawing created by ICPE and EarthFax Engineering showing the conveyor is included as Plate 1 of this appendix.

On Plate 1, the existing conveyor belt gallery from Mine No. 1 is shown as well as the proposed conveyor belt gallery to be extended from Mine No. 2. The plate also shows the location of the access road and the transfer point and its concrete pad.

The extension of the No. 2 Conveyor Gallery either applies or does not apply to the chapters, sections or UDOGM regulations discussed within the White Oak Mine permit as noted below:

R645-301-100, General Content, Legal and Financial. Not applicable.

R645-301-200, Soils. Not applicable. The conveyor and associated construction will remain within the previously disturbed pad area at the White Oak Complex. No topsoil will be disturbed. The current plan for reclamation covers the pad area and slope to be utilized in the extension of the conveyor.

R645-301-300, Biology. Not applicable. Since the proposed amendment involves an active operation within the disturbed area, no vegetation removal is required. Seeding of the disturbed area is not required during the operational stage and the current reclamation plan address the revegetation requirements of the White Oak Complex area.

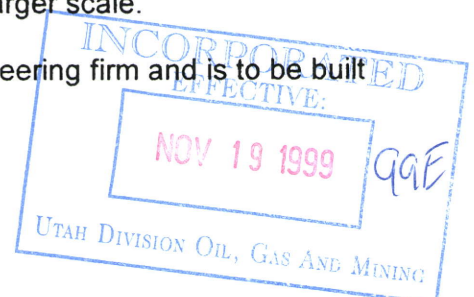
R645-301-400, Land Use and Air Quality. Not applicable. The current Air Quality Approval Order covers all existing activities. The post mining land use will not be changed.

R645-301-500, Engineering. Applicable.

A temporary access road to the conveyor transfer point support pad will be graded. The road will be removed and regraded once the construction is complete. The slope where the pad and road are to be constructed is currently disturbed with an access road on the top and bottom of the slope (see Drawing No. R645-301-521.124). In addition the slope has been exposed to coal fines from the coal pile since the opening of the mine in the 1970's.

Drawing No. R645-301-521.124, has been revised to include the extension of the conveyor, and Plate 1 in Appendix 500 gives a view of the conveyor project at a larger scale.

The Conveyor Gallery No.2 has been redesigned by a structural engineering firm and is to be built in consultation with a geotechnical engineer.

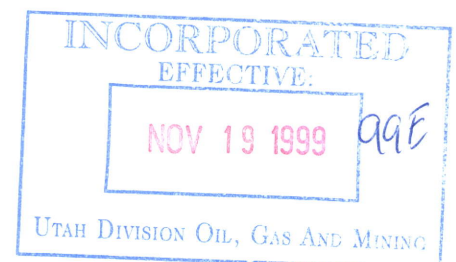


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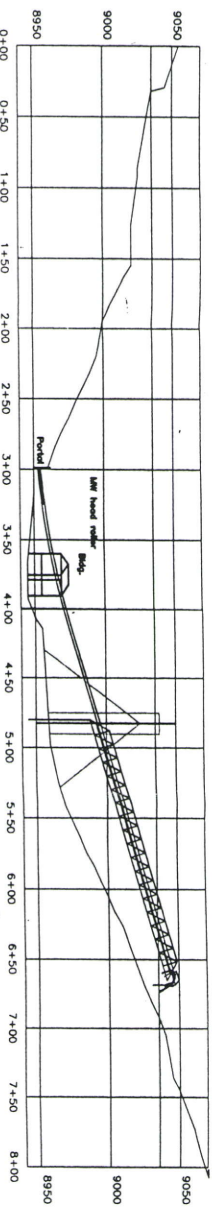
R645-301-600, Geology. Not applicable.

R645-301-700, Hydrology. Not applicable. The proposed amendment on both the operational and reclamation phases does not change any of the diversions, sediment controls, etc. The surface area will remain substantially unchanged.

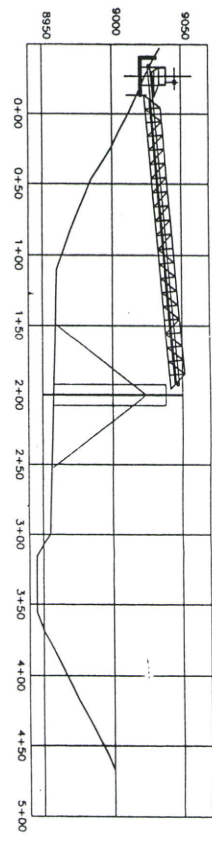
R645-301-800, Bonding. Not applicable. The existing approved reclamation plan addresses the removal and hauling of the conveyor structures. Conveyor Gallery No. 1 and the High Angle Conveyor parts will be used to extend Conveyor Gallery No.2. This project will decrease conveyor components to be removed during reclamation, since excess components will be used at other mines or sold as salvage, prior to reclamation.



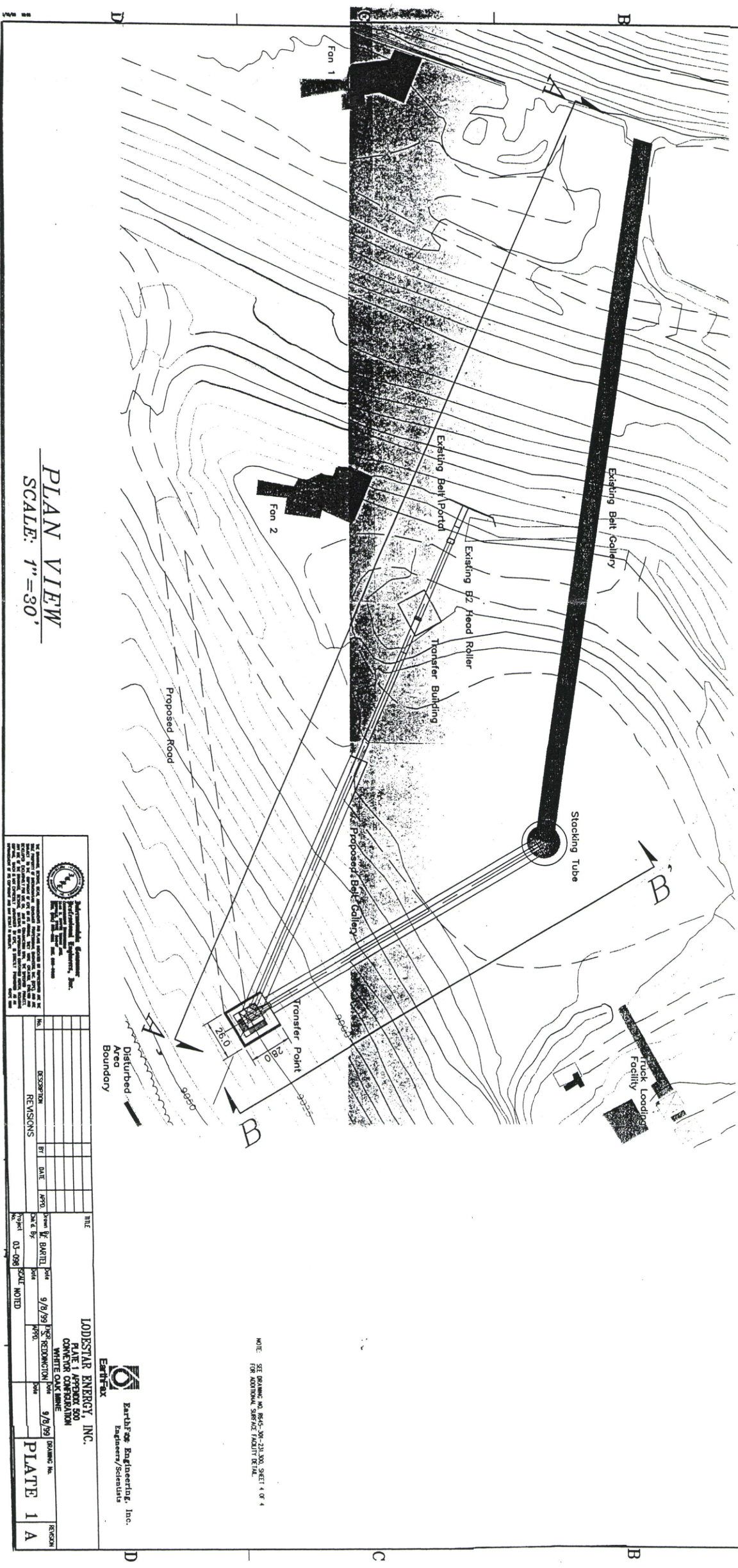




SECTION A-A  
SCALE: 1"=50'



SECTION B-B  
SCALE: 1"=50'



PLAN VIEW  
SCALE: 1"=30'

NOTE: SEE DRAWING NO. 85-5-20-23.300, SHEET 4 OF 4 FOR ADDITIONAL SURFACE FACILITY DETAILS.

		<b>LODGESTAR ENERGY, INC.</b> PLATE 1 APPROX 500 CONVEYOR CONTRIBUTION WHITE OAK MINE	
DATE	BY	DATE	BY
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SCALE	NOTED	SCALE	NOTED
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TITLE: <b>LODGESTAR ENERGY, INC.</b> PLATE 1 APPROX 500 CONVEYOR CONTRIBUTION WHITE OAK MINE		DRAWING NO. <b>85-5-20-23.300</b> SHEET <b>4 OF 4</b>	

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